

QUARTERLY MONITORING REPORT

FOURTH QUARTER 1998

L.E.CARPENTER

January 1999

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Transmittal Letter

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Date: 1/26/99
Project No.: 3868.04
Subject: LE Carpenter, Wharton, NJ

We are sending you:

COPIES	DATE	NO.	DESCRIPTION
2	1/26/99	3868.04	4 th Quarter Monitoring Report

These items are transmitted as checked below:

For your use

Remarks: Steven:

Please find enclosed two (2) copies of the 4th Quarter Monitoring Report

Nick

Signed:

Nicholas J. Clevett; Technical Manager
(Name and Title)

xc:



Section 1 Introduction

L.E. Carpenter and Company (LEC) is pleased to submit this Quarterly Monitoring Report for the L.E. Carpenter site ("the site" or "the subject site") located at 170 North Main Street, Wharton, New Jersey (Figure 1). Quarterly monitoring events are performed at the site to comply with paragraph 35 of the 1986 Administrative Consent Order issued to L.E. Carpenter by the New Jersey Department of Environmental Protection (NJDEP). This report provides a summary of activities completed during the fourth quarter 1998, to include routine quarterly groundwater monitoring activities.

During the fourth quarter 1998, RMT conducted the following:

- Continued active free product recovery on a monthly basis utilizing enhanced fluid recovery (EFR) in accordance with the NJDEP approval letter dated August 20, 1997.
- Conducted quarterly groundwater monitoring activities as required under the Administrative Consent Order.
- Replaced and surveyed 6 staff gauges to monitor surface water elevation fluctuations of surrounding surface water bodies (Rockaway River and the Air Products drainage ditch).

A discussion of these activities is provided in the following sections.



Section 2

EFR Activities

In August 1997, the NJDEP approved the Remedial Action Plan (RAP) which described free product removal using enhanced fluid recovery (EFR) for the eastern portion of the subject site (east of the rail spur right-of-way). EFR is conducted by applying a vacuum to product recovery wells to primarily remove free standing product, in addition to contaminated groundwater, contaminant vapors within vadose zone soils, and to enhance any natural biodegradation that may be occurring in the soil and groundwater as a result of increased aeration. The locations of the twenty-eight (28) EFR wells purged during each monthly EFR event and all groundwater monitoring wells are shown in Figure 2.

Monthly EFR events conducted by RMT during the fourth quarter 1998 were performed on October 22, 1998, November 20, 1998 and December 18, 1998 (Table 1). Prior to conducting EFR, product level and thickness were measured in each EFR well. Product measurements were recorded to determine the correct placement of the drop pipe or "stinger" to maximize product recovery and to track the amount of free product and the total volume of fluids removed as a result of EFR activities through fourth quarter 1998. Charts for each free product plume region (western, central, eastern) that graphically display free product thickness fluctuations over time, and free standing product fluctuations trends are presented as Appendix A. Figure 3 displays the extent of free product on-site for each EFR event.

The amount of free product extracted during each EFR event was estimated by measuring product thickness collected in the vacuum truck with an interface probe, while also accounting for an estimated volume of product vapor emitted through the vent stack. Product vapor volume estimates were based on vacuum truck air flow measurements (in cfm) and vented contaminant concentrations (in ppm) obtained throughout each EFR event. During the fourth quarter 1998, a total of 588 gallons of fluid was removed during EFR activities, of which, approximately 73 gallons was free phase product. Since start-up in December 1997, site EFR activities have removed approximately 1,779 gallons of free product through December 18, 1998.

The following paragraphs describe free standing product trends in the western, central, and eastern portions of the free product plume. Free standing product refers to a volume (gal) of product occupying the casings of each EFR well. Total free standing product represents the sum of product volumes from each of the segregated region EFR wells.

In the western portion of the plume (EFR wells 1, 2, 3, 17, 18, 20, 21, and 28), there was a slight increase in the total volume of free standing product during the fourth quarter 1998. Total free standing product increased from 6.48 gallons on October 22, 1998 to 7.31 gallons on December 18, 1998. All western EFR wells showed slight increases in free product thickness during the fourth quarter 1998.

In the central portion of the plume (EFR wells 4, 5, 6, 7, 19, 22, 23, 24, 25, 26, and 27), there was also a slight increase in the volume of free standing product during the fourth quarter 1998. The total free standing product increased from 9.11 gallons on October 22, 1998 to 10.35 gallons on December 18, 1998. EFR wells 4, 5, 22, 26 & 27 showed slight decreases in free product thickness, while EFR wells 6, 7, 19, 23, 24 and 25 showed slight increases in free product thickness.

In the eastern portion of the plume (EFR wells 8, 9, 10, 11, 12, 13, 14, 15, and 16), the total free standing product increased from 7.1 gallons on October 22, 1998 to 7.27 gallons on December 18, 1998. EFR wells 8, 10, & 11, showed slight decreases in free product thickness, while EFR wells 9, 12, 13 & 15 showed slight increases in free product thickness during the fourth quarter 1998. EFR wells 14 and 16 did not reveal any measurable free product thickness.

The total free standing product throughout the site (accounting for all 28 EFR wells) increased slightly over the course of the fourth quarter from 22.7 gallons on October 22, 1998 to 24.93 gallons on December 18, 1998. However, consistent with third quarter 1998 trends, free product extent and thickness summary figures (figure 3) indicate that the previous volume of free product existing in the center of the plume (the 5-feet contour) remains reduced. This appears to be the result of the continued reduction in the volume of free standing product measured in the former source area (EFR wells 10 and 11) during each of the three EFR events through fourth quarter 1998.



Section 3

Quarterly Monitoring

During the fourth quarter 1998, RMT conducted routine quarterly groundwater monitoring activities at the L.E Carpenter site in accordance with the revised quarterly sampling program initiated during the fourth quarter 1995.

Groundwater sampling was conducted on November 20, 1998, in accordance with the procedures contained in the NJDEP's "Field Sampling Procedures Manual" dated May 1992. Monitoring wells MW-4, MW-14I, MW-15S, MW-15I, MW-22R, and MW-25R were purged utilizing a peristaltic pump to remove at least three well volumes prior to sampling. (Please note: Monitoring wells MW-22 and MW-25 were abandoned and replaced by Weston during the week of July 21, 1997 and are referred to as MW-22R and MW-25R in this report). During the well purge process, indicator parameters were monitored and recorded so that a representative sample of the formation water was collected for analysis (Appendix B). Once the wells were purged, samples were collected using Teflon coated plastic bailers.

A sample duplicate, a field blank and a trip blank were collected to satisfy quality control requirements. The trip blank was prepared by the laboratory and remained with the sample containers until the samples were returned to the laboratory. The duplicate was collected from monitoring well MW-15I. The field blank was collected by pouring distilled water through a Teflon coated bailer to verify that the field equipment was not adversely impacting the samples and decontamination procedures were adequate. Any sampling equipment used at each well was decontaminated prior to each use using a soap and water wash and distilled water rinse.

The results of the chemical analyses were compared to the NJDEP Class IIA Groundwater Quality Standards (NJGQS) and the Discharge Criteria presented in the Record of Decision (ROD) dated April 20, 1994. The presence of benzene and toluene was not detected at concentrations above the method detection limit in any of the groundwater samples. However, monitoring well MW-22R contained concentrations of ethylbenzene, total xylenes, and bis-2-ethylhexylphthalate (DEHP) above both the New Jersey standards and the ROD discharge criteria. Monitoring wells MW-4, MW-15I & MW-25R were also found to contain residual concentrations of contaminants of concern, however all contaminant concentrations were below NJGQS and the discharge criteria outlined in the ROD with the exception of the MW-4 DEHP concentration of 650 µg/L.

Concentrations of ethylbenzene (1,650 µg/l), total xylenes (7,230 µg/l), and DEHP (1,100 µg/L) were detected in the sample collected from monitoring well MW-22R. Although these

concentrations exceed both NJGQS and ROD discharge criteria, a continuing downward trend in the concentrations of all three contaminants of concern has been noted at this monitoring location. Concentration trends of contaminants of concern detected at MW-22R are presented as Appendix C. Contaminant concentrations trends at this location will continue to be closely monitored.

MW-14I was inadvertently labeled as MW-14J by STL Envirotech field personnel during the 4th Quarter 1998 sampling event. Correspondence documenting this error is presented as Appendix D. Historical groundwater monitoring data, to include the results from fourth quarter 1998 sampling, are presented in Table 2 with corresponding analytical laboratory reports presented as Appendix E. Site sampling activities and all laboratory analyses were performed by STL Envirotech, Inc. of Edison, New Jersey.



Section 4

Water Table Elevations

On November 20, 1998, Envirotech Research, Inc. (ERI) measured static groundwater levels from 71 different locations throughout the site (see Table 3) to evaluate the groundwater flow pattern in the shallow aquifer system specific to the subject site. It should be noted that 14 of the 71 locations monitored were observed to contain a measurable amount of free product. Reference page 18 of the groundwater analytical report (Appendix E) for a list of wells at which free product was detected. Figure 4 displays the water table potentiometric surface and indicates that groundwater flow direction is similar to that observed historically (generally toward the northeast).

Six new staff gauges were installed and surveyed during 4th quarter 1998. Three (3) gauges were placed along the northern bank of the Rockaway River (SG-R1, SG-R2 & SG-R3), while the remaining three (3) gauges were placed along the eastern bank of the Air Products drainage ditch (SG-D1, SG-D2 & SG-D3). Reference figure 2 for staff gauge placement locations. All six staff gauges were professionally surveyed by Recon, Inc., of Whippany, New Jersey on November 9, 1998. An updated copy of the well location and elevation map is presented as figure 5. Based on staff gauge elevation data collected during the 4th quarter 1998, it appears that the Rockaway River recharges the shallow aquifer system local to the subject site. The reverse relationship is true of shallow groundwater local to the Air Products drainage ditch. Based on elevation data, shallow groundwater recharges both the eastern and the western sides of the drainage ditch.

Table 1
L.E. CARPENTER - Wharton, New Jersey
Free Product Recovery - EFR Wells

EFR Event Date	Development November 21, 1997	EFR #1 December 9, 1997 Feet of Product	EFR #2 January 7, 1998 Feet of Product	EFR #3 January 22, 1998 Feet of Product	EFR #4 February 17, 1998 Feet of Product	EFR #5 March 13, 1998 Feet of Product	EFR #6 March 27, 1998 Feet of Product	EFR #7 April 24, 1998 Feet of Product	EFR #8 May 29, 1998 Feet of Product	EFR #9 June 30, 1998 Feet of Product	EFR #10 July 31, 1998 Feet of Product	EFR #11*** August 24, 1998 Feet of Product	EFR #12 September 17, 1998 Feet of Product	EFR #13 October 22, 1998 Feet of Product	EFR #14 November 20, 1998 Feet of Product	EFR #15 December 18, 1998 Feet of Product
Well No.																
EFR-1	1.64	1.53	1.94	0.36	2.48	0.93	0.94	1.42	1.35	2.11	1.28	1.22	1.71	1.59	1.71	1.41
EFR-2	1.55	1.50	1.86	0.06	2.20	2.96	2.92	2.65	2.44	1.78	1.12	1.09	1.21	1.29	1.51	1.18
EFR-3	0.85	1.02	1.27	-	1.58	1.19	0.03	0.24	0.19	0.77	0.72	0.93	1.03	1.01	1.75	1.79
EFR-4	1.03	2.27	0.54	0.07	0.30	-	-	-	-	0.03	0.38	1.23	2.40	2.17	2.28	2.28
EFR-5	4.03	3.74	4.25	0.32	3.29	3.39	1.71	2.71	2.02	1.86	2.38	2.52	2.33	2.52	2.19	1.38
EFR-6	0.72	1.00	1.24	-	2.27	1.71	1.17	2.23	1.55	1.56	1.96	1.56	1.42	1.25	1.29	0.16
EFR-7	0.17	0.09	0.16	-	-	-	-	-	-	0.02	0.02	0.03	0.07	0.09	0.07	0.03
EFR-8	0.00	0.00	0.00	-	0.08	-	-	-	-	0.03	0.04	0.08	0.13	1.31	1.26	1.86
EFR-9	0.00	1.10	1.79	1.15	0.16	3.08	0.08	0.07	0.11	0.29	0.61	0.98	4.52	4.34	4.38	3.98
EFR-10	5.20	5.80	6.42	2.34	7.47	7.06	6.05	6.71	5.47	5.68	4.94	4.52	-	4.06	3.65	3.52
EFR-11	3.07	4.04	4.28	5.64	4.47	4.32	4.67	5.91	5.73	6.08	4.73	4.47	3.95	4.06	3.65	0.17
EFR-12	0.04	0.03	0.00	-	0.07	-	-	-	-	0.02	0.28	0.22	0.24	0.15	0.29	1.30
EFR-13	0.48	0.56	1.33	0.05	1.28	1.07	1.07	0.67	-	0.90	0.56	0.48	0.66	-	-	0.32
EFR-14	0.10	0.16	0.00	-	-	-	-	-	-	-	-	-	0.03	0.12	-	-
EFR-15	0.09	0.12	0.27	-	0.06	-	-	-	-	-	-	-	-	-	-	0.53
EFR-16	0.00	0.00	0.00	-	-	-	-	-	-	0.02	0.37	0.29	0.46	0.56	0.71	1.08
EFR-17	0.04	0.17	1.56	0.39	0.17	0.08	-	-	-	0.01	0.08	0.14	0.48	0.68	0.98	2.44
EFR-18	0.10	0.10	0.09	-	-	-	-	-	-	0.42	0.90	1.26	1.68	1.95	2.11	2.11
EFR-19	0.54	2.80	1.89	0.49	1.95	1.63	1.44	0.98	0.65	0.37	0.63	0.41	0.29	0.41	1.33	1.58
EFR-20	0.40	0.34	0.95	0.47	0.27	-	-	-	-	3.29	1.97	1.87	1.86	1.77	1.67	1.62
EFR-21	2.36	2.40	2.71	2.74	2.74	4.14	3.97	4.23	3.98	2.86	2.87	2.97	2.83	2.58	2.29	2.29
EFR-22	3.78	4.10	0.05	4.81	3.40	4.69	3.42	1.82	1.22	0.96	0.05	0.11	0.08	0.27	1.03	3.07
EFR-23	0.00	0.06	0.06	-	0.02	-	-	-	-	-	-	-	-	0.03	0.12	0.14
EFR-24	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	1.85
EFR-25	2.95	3.00	3.55	0.26	4.15	3.11	0.72	0.82	0.79	0.78	0.60	0.41	0.29	0.41	1.24	1.09
EFR-26	2.30	2.05	2.66	0.29	2.30	2.12	1.43	1.32	1.95	1.21	2.06	1.58	1.17	1.24	1.08	0.51
EFR-27	0.15	0.02	2.71	0.02	0.74	-	-	-	-	0.02	0.33	0.45	1.49	0.54	0.47	0.03
EFR-28	2.20	2.30	1.78	0.48	2.60	3.20	3.48	4.40	3.16	2.61	1.47	1.73	1.69	1.83	1.79	1.74
MIN (ft)	0.00	0.00	0.00	0.02	0.02	0.08	0.03	0.03	0.02	0.01	0.02	0.03	0.03	0.03	0.07	0.03
MAX (ft)	5.20	5.80	6.42	5.64	7.47	7.06	6.05	6.71	5.73	6.08	4.94	4.52	4.34	4.38	3.98	3.99
Average (ft)	1.20	1.44	1.55	1.17	1.92	2.21	2.01	1.94	1.25	1.22	1.23	1.36	1.34	1.34	1.47	1.48
Total Free Product (ft)	33.69	40.30	43.36	19.94	44.05	44.68	33.10	36.24	31.07	31.16	30.38	33.90	34.92	38.30	38.36	24.93
Total Standing Free Product Volume (gal)	21.60	25.83	27.79	12.78	28.24	28.64	21.22	23.23	19.92	19.97	19.47	19.70	22.04	22.70	24.90	42
Estimated Total Free Product Removed from Vacuum Truck Gauging (gal)*	315	250	210	80	120	130	100	110	95	105	76	55	60	14	17	110
Total Volume Fluid Removed (gal)	2,350	1,410	376	256	314	300	339	403	390	561	211	220	329	212	120	256
Volume Resulting from Drum Purging (GW purge water) if applicable					338	150	600	70	110	71	-	110	-	-	-	256
Total Volume Removed from Site (gal) (Inferred volume)	2,350	1,410	376	256	314	638	489	1,003	460	671	282	220	439	212	120	1,779
Cumulative Total Free Product Removed (gal)	315	565	775	855	975	1,105	1,205	1,315	1,410	1,515	1,591	1,646	1,706	1,720	1,737	1,779
Disposal Cost**	\$3,976.37	\$2,742.62	\$1,130.50	\$1,130.50	\$1,219.12	\$1,131.37	\$1,151.31	\$2,038.43	\$1,240.75	\$1,247.68	\$1,324.62	\$1,838.93	\$1,383.18	\$915.25	\$915.00	\$973.00
Total Cost per gal***	\$1.69	\$1.95	\$3.01	\$4.42	\$3.88	\$2.24	\$3.15	\$2.03	\$2.70	\$2.01	\$4.70	\$8.36	\$3.15	\$4.32	\$7.63	\$3.80

* Estimated free product (gal) based on Vacuum Truck gauging (interface probe) directly after each EFR Event
** Total incurred disposal cost for EFR event (product and groundwater) and monitoring well purge water from 1/4" well development and monitoring activities (if applicable)
*** Total Cost per gallon includes product transportation & disposal, manifest prep. & regulatory admin. fee for combined EFR and GW purge water drum volumes (if applicable)
**** EFR #11 free product volume was 56 gal and contained PCBs (approx. weight 450 lbs total @ specific gravity of 8.18 lbs/gal). Disposal costs were significantly higher due to PCB content

Notes:
Product thickness was determined prior to the EFR event.
gal = gallon
All EFR Wells are 4 inch in diameter.
EPR events 13 and 14 product removal was low due to significant quantities of product remaining emulsified as the result of a short vac truck standing time prior to gauging
Vac truck is now allowed to sit for a minimum of 1 hour prior to gauging on flat ground
Product removal estimate does not take into account a % of product remaining emulsified due to high agitation

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

1st QUARTER 1995 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	26	ND	32	25000
MW-14I	ND	0.4	ND	1.2	140
MW-15S	ND	ND	ND	ND	2.4
MW-15I	ND	ND	ND	ND	250
MW-17S	ND	0.6	0.3	1.9	11
MW-22	ND	57	ND	260	6500
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	ND
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

2nd QUARTER 1995 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	16	ND	13	46000
MW-14I	ND	ND	ND	ND	1.6
MW-15S	ND	ND	ND	ND	ND
MW-15I	ND	ND	ND	ND	7.2
MW-25	ND	ND	ND	ND	1.6
MW-30	ND	17	ND	13	45000
MW-17S	0.2	ND	0.18	ND	ND
MW-22	ND	311	ND	955	380
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	0.73	ND	ND	1.3
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

3rd QUARTER 1995 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	9.7	ND	8.7	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	ND	ND	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-25	ND	ND	ND	ND	NS
MW-30	ND	ND	ND	ND	NS
MW-22	ND	171	ND	693	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

4th QUARTER 1995 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	8.8	ND	11	17000
MW-14I	ND	ND	ND	ND	2.6
MW-15S	ND	ND	ND	ND	ND
MW-15I	ND	ND	ND	ND	2.8
MW-25	ND	ND	ND	ND	68
MW-30	ND	ND	ND	ND	ND
MW-22	ND	123	ND	494	320
MW-17S	ND	ND	ND	0.63	ND
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	ND
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data.

1st QUARTER 1996 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	24	ND	47	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	33	ND	83	NS
MW-15I	ND	ND	ND	ND	NS
MW-30	ND	ND	ND	ND	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

3rd QUARTER 1996 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	6.8	ND	4.3	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	ND	ND	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-25	ND	0.34	ND	2.2	NS
MW-22	ND	359	ND	1320	NS
MW-30	ND	ND	ND	ND	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

4th QUARTER 1996 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	2.3	ND	ND	11000
MW-14I	ND	ND	ND	ND	2.7
MW-15S	ND	0.21	ND	1.7	ND
MW-15I	ND	ND	ND	ND	ND
MW-25	ND	ND	ND	ND	1.5
MW-17S	ND	ND	ND	ND	ND
MW-22	ND	320	ND	1330	ND
MW-15I Dup	ND	ND	ND	ND	1.9
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	ND
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

1st QUARTER 1997 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	3.5	ND	1.8	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	ND	ND	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-25	ND	ND	ND	ND	NS
MW-30S	ND	0.2	ND	1.0	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	0.2	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

2nd QUARTER 1997 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	1.2	ND	4.2	120
MW-14I	ND	ND	ND	ND	1.6
MW-15S	ND	ND	ND	ND	1.2
MW-15I	ND	ND	ND	ND	2.2
MW-22	ND	5,730	ND	32,900	7,500
MW-25	ND	13.5	ND	89	63
MW-17S	ND	ND	ND	ND	NS
MW-30	ND	ND	ND	ND	2.2
TRIP BLANK	ND	ND	ND	ND	ND
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

3rd QUARTER 1997 (Weston)					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	2.2	ND	12.6	NS
MW-14I	1.2	22.1	ND	176	NS
MW-15S	ND	ND	ND	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-22	ND	11,400	348	66,000	NS
MW-25	ND	4.1	ND	30.7	NS
MW-30-S	ND	ND	ND	ND	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

1st QUARTER 1998					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	bis-2-Ethylhexylphthalate
MW-4	ND	ND	ND	ND	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	ND	1.4	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-22	ND	4,070	348	20,600	NS
MW-25	ND	0.33	ND	1.5	NS
MW DUP (MW-25)	ND	0.39	ND	0.94	NS
TRIP BLANK	ND	ND	ND	ND	NS
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	40
ROD Discharge Criteria (ug/L)	NA	350	500	20	20

2nd QUARTER 1998					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	DEHP (ug/L)
MW-4	ND	1.0	ND	1.4	710
MW-14I	ND	0.34	ND	2	24
MW-15S	ND	ND	ND	1.3	ND
MW-15I	ND	ND	ND	ND	1.9
MW-17S	ND	ND	ND	1.2	6.1
MW-22R	ND	2,260	ND	11,300	5,800
MW-25R	ND	ND	ND	ND	5.3
MW-15I DUP	ND	ND	ND	ND	3.8
TRIP BLANK	ND	ND	ND	ND	ND
FIELD BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	30
ROD Discharge Criteria (ug/L)	NA	350	500	20	30

TABLE 2
L.E. CARPENTER - Wharton, New Jersey
Quarterly Groundwater Monitoring Data

3rd QUARTER 1998					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	DEHP (ug/L)
MW-4	ND	1.9	ND	1.2	NS
MW-14I	ND	ND	ND	ND	NS
MW-15S	ND	ND	ND	ND	NS
MW-15I	ND	ND	ND	ND	NS
MW-22R	ND	1,880	ND	10,300	NS
MW-25R	ND	ND	ND	ND	NS
MW-22RD (DUP)	ND	2,510	ND	11,000	NS
FIELD BLANK	ND	ND	ND	ND	NS
TRIP BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	30
ROD Discharge Criteria (ug/L)	NA	350	500	20	30

4th QUARTER 1998					
Monitoring Well	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	DEHP (ug/L)
MW-4	ND	9.3	ND	3.3	650
MW-14I	ND	ND	ND	ND	ND
MW-15S	ND	ND	ND	ND	ND
MW-15I	ND	ND	ND	0.53	11
MW-17S	ND	ND	ND	ND	6
MW-22R	ND	1,650	ND	7,230	1,100
MW-25R	ND	ND	ND	ND	1.9
MW-15ID (DUP)	ND	0.2	ND	0.8	9.8
FIELD BLANK	ND	ND	ND	ND	1.3
TRIP BLANK	ND	ND	ND	ND	NS
NJDEP GWQS (ug/L)	NA	700	1000	40	30
ROD Discharge Criteria (ug/L)	NA	350	500	20	30

Notes:

1) ug/L = micrograms per liter

2) NJDEP GWQS = New Jersey Groundwater Quality Standards

3) Values in bold are above both the NJDEP GWQS and the ROD Discharge Criteria

4) NA = Not Applicable

5) NS = Not Sampled

6) ND: No Detection

7) No historical Weston reports were available for 2nd quarter 1996 & 4th quarter 1997

Table 3
Water Level Elevations (4th. QUARTER 1998)
L.E. Carpenter, Wharton, New Jersey

WELL LOCATION	LATITUDE	LONGITUDE	ELEVATION	OUTER CASING	INNER WELL	MEAS DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS	CORRECTED WATER LEVEL ELEVATIONS
CW-1	40° 54' 14.2"	74° 34' 34.7"	630.83	634.35	--	Nov-98		9.51	--	621.32	--	--
CW-3	40° 54' 13.8"	74° 34' 32.5"	628.63	633.30	--	Nov-98		9.33	--	619.30	--	--
GEI-1I	40° 54' 19.3"	74° 34' 35.3"	628.44	630.93	630.78	Nov-98		6.84	--	623.94	--	--
GEI-2 I	40° 54' 17.4"	74° 34' 43.1"	635.92	638.35	638.20	Nov-98		13.28	--	624.92	--	--
GEI-2 S	40° 54' 17.3"	74° 34' 43.0"	635.46	637.87	637.67	Nov-98		13.24	--	624.43	--	--
GEI-3 I	40° 54' 14.8"	74° 34' 43.7"	637.56	639.99	639.85	Nov-98		15.41	--	624.44	--	--
M.W.-1R	40° 54' 13.8"	74° 34' 38.8"	635.79	635.78	635.47	Nov-98	11.63	12.88	623.84	622.59	1.25	623.68
MW-2R	40° 54' 14.4"	74° 34' 33.1"	629.06	632.28	632.14	Nov-98	--	8.68	--	623.46	--	--
M.W.-3	40° 54' 14.0"	74° 34' 32.6"	628.64	632.27	632.56	Nov-98	8.69	11.46	623.87	621.10	2.77	623.51
M.W.-4	40° 54' 12.4"	74° 34' 34.4"	628.86	632.31	632.50	Nov-98	--	8.86	--	623.64	--	--
MW-6R	40° 54' 13.8"	74° 34' 34.1"	629.82	632.64	632.42	Nov-98	8.41	8.74	624.01	623.68	0.33	623.97
M.W.-8	40° 54' 12.7"	74° 34' 33.3"	627.99	630.56	628.79	Nov-98	--	3.48	--	625.31	--	--
M.W.-9	40° 54' 12.5"	74° 34' 35.1"	629.21	631.69	630.18	Nov-98	--	5.66	--	624.52	--	--
M.W.-11D (R)	40° 54' 14.2"	74° 34' 34.9"	630.66	633.35	633.09	Nov-98	--	7.52	--	625.57	--	--
M.W.-11I (R)	40° 54' 14.1"	74° 34' 34.9"	630.89	633.67	633.33	Nov-98	--	9.72	--	623.61	--	--
M.W.-11 S	40° 54' 14.0"	74° 34' 34.9"	631.23	633.26	632.96	Nov-98	9.53	12.84	623.43	620.12	3.31	623.00
MW-12R	40° 54' 12.3"	74° 34' 35.9"	632.17	634.86	634.33	Nov-98	--	10.51	--	623.82	--	--
M.W.-13 I	40° 54' 15.1"	74° 34' 31.9"	628.36	630.88	630.66	Nov-98	--	7.18	--	623.48	--	--
MW-13R	40° 54' 15.0"	74° 34' 31.8"	628.26	630.96	630.59	Nov-98	--	7.18	--	623.41	--	--
M.W.-13 S	40° 54' 15.3"	74° 34' 31.7"	628.34	631.40	631.23	Nov-98	--	7.12	--	624.11	--	--
M.W.-14 I	40° 54' 14.2"	74° 34' 31.2"	625.93	628.32	628.23	Nov-98	--	4.89	--	623.34	--	--
M.W.-14 S	40° 54' 14.3"	74° 34' 31.0"	625.78	628.63	628.41	Nov-98	--	4.85	--	623.56	--	--
M.W.-15 I	40° 54' 15.0"	74° 34' 37.9"	634.74	636.88	636.66	Nov-98	--	12.91	--	623.75	--	--
M.W.-15 S	40° 54' 15.0"	74° 34' 38.0"	634.83	637.03	636.77	Nov-98	--	12.96	--	623.81	--	--
M.W.-16 I	40° 54' 16.0"	74° 34' 40.3"	632.43	635.08	634.96	Nov-98	--	10.75	--	624.21	--	--
M.W.-16 S	40° 54' 15.9"	74° 34' 40.4"	632.57	634.69	634.47	Nov-98	--	10.29	--	624.18	--	--
M.W.-17 S	40° 54' 12.8"	74° 34' 39.7"	632.95	634.92	634.79	Nov-98	--	10.91	--	623.88	--	--
M.W.-18 I	40° 54' 18.4"	74° 34' 35.2"	628.35	631.19	631.04	Nov-98	--	7.17	--	623.87	--	--
M.W.-18 S	40° 54' 18.4"	74° 34' 35.0"	628.22	631.48	631.26	Nov-98	--	7.41	--	623.85	--	--
M.W.-19	40° 54' 17.1"	74° 34' 43.7"	636.72	639.24	638.88	Nov-98	--	14.35	--	624.53	--	--
M.W.-19-1	40° 54' 17.0"	74° 34' 44.0"	636.50	639.26	638.86	Nov-98	--	14.30	--	624.56	--	--
M.W.-19-2	40° 54' 17.2"	74° 34' 44.0"	637.05	639.36	638.76	Nov-98	--	14.21	--	624.55	--	--
M.W.-19-3	40° 54' 17.1"	74° 34' 44.5"	637.54	640.04	639.65	Nov-98	--	14.98	--	624.67	--	--
M.W.-19-4	40° 54' 16.7"	74° 34' 44.0"	636.27	638.44	637.74	Nov-98	--	14.14	--	623.60	--	--

Table 3
Water Level Elevations (4th. QUARTER 1998)
L.E. Carpenter, Wharton, New Jersey

WELL LOCATION	LATITUDE	LONGITUDE	ELEVATION	OUTER CASING	INNER WELL	MEAS DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS	CORRECTED WATER LEVEL ELEVATIONS
M.W.-19-5	40° 54' 17.3"	74° 34' 43.5"	636.39	639.07	638.74	Nov-98	--	14.29	--	624.45	--	--
M.W.-20	40° 54' 17.2"	74° 34' 41.2"	634.82	637.03	636.77	Nov-98	--	12.49	--	624.28	--	--
M.W.-21	40° 54' 14.1"	74° 34' 28.2"	625.17	629.09	628.80	Nov-98	--	5.72	--	623.08	--	--
M.W.-22	40° 54' 13.7"	74° 34' 31.2"	625.94	628.31	628.13	Nov-98	--	4.82	--	623.31	--	--
M.W.-23	40° 54' 15.8"	74° 34' 30.5"	628.70	630.95	630.64	Nov-98	--	5.82	--	624.82	--	--
M.W.-25	40° 54' 13.7"	74° 34' 29.8"	625.25	627.37	627.22	Nov-98	--	3.86	--	623.36	--	--
MW-26	40° 54' 15.7"	74° 34' 34.3"	630.84	634.39	633.26	Nov-98	--	9.69	--	623.57	--	--
RW-1	40° 54' 13.6"	74° 34' 39.1"	635.18	637.81	637.38	Nov-98	--	13.58	--	623.80	--	--
RW-2	40° 54' 14.2"	74° 34' 32.8"	629.80	631.78	631.68	Nov-98	--	8.25	--	623.43	--	--
RW-3	40° 54' 14.9"	74° 34' 33.9"	629.89	632.15	631.99	Nov-98	--	8.42	--	623.57	--	--
SG-D1*	--	--	626.41	--	--	Nov-98	--	DRY	--	--	--	--
SG-D2*	--	--	626.86	--	--	Nov-98	--	DRY	--	--	--	--
SG-D3*	--	--	626.43	--	--	Nov-98	--	0.40	--	623.50	--	--
SG-R1*	--	--	641.52	--	--	Nov-98	--	1.35	--	639.54	--	--
SG-R2*	--	--	628.84	--	--	Nov-98	--	0.84	--	626.35	--	--
SG-R3*	--	--	627.38	--	--	Nov-98	--	1.05	--	625.10	--	--
WP-A1	40° 54' 13.9"	74° 34' 38.8"	636.29	636.32	635.81	Nov-98	11.94	12.16	623.87	623.65	0.22	623.84
WP-A2	40° 54' 14.2"	74° 34' 39.0"	637.31	639.62	639.19	Nov-98	--	DRY	--	--	--	--
WP-A3	40° 54' 13.7"	74° 34' 40.3"	635.97	635.97	635.56	Nov-98	--	11.69	--	623.87	--	--
WP-A4	40° 54' 14.0"	74° 34' 38.5"	635.63	635.66	635.10	Nov-98	13.12	14.22	621.98	620.88	1.10	621.84
WP-A5	40° 54' 14.4"	74° 34' 38.1"	635.70	--	637.85	Nov-98	--	14.13	--	623.72	--	--
WP-A6	40° 54' 13.6"	74° 34' 38.0"	634.95	--	637.28	Nov-98	13.51	14.22	623.77	623.06	0.71	623.68
WP-A7	40° 54' 13.7"	74° 34' 36.6"	632.94	--	634.88	Nov-98	11.26	13.22	623.62	621.66	1.96	623.37
WP-A8	40° 54' 14.3"	74° 34' 36.6"	634.70	--	637.56	Nov-98	13.81	16.28	623.75	621.28	2.47	623.43
WP-A9	40° 54' 13.6"	74° 34' 37.4"	637.22	--	639.32	Nov-98	15.97	17.72	623.35	621.60	1.75	623.12
WP-B1	40° 54' 13.9"	74° 34' 35.7"	631.85	--	633.65	Nov-98	8.98	9.55	624.67	624.10	0.57	624.60
WP-B2	40° 54' 14.5"	74° 34' 35.1"	630.48	632.58	632.25	Nov-98	8.65	8.71	623.60	623.54	0.06	623.59
WP-B3	40° 54' 14.2"	74° 34' 35.4"	631.71	--	633.33	Nov-98	--	9.57	--	623.76	--	--
WP-B4	40° 54' 14.5"	74° 34' 34.5"	629.93	--	632.56	Nov-98	--	8.40	--	--	--	--
WP-B5	40° 54' 14.7"	74° 34' 34.2"	630.03	--	632.11	Nov-98	7.51	7.65	624.60	624.46	0.14	624.58
WP-B6	40° 54' 13.4"	74° 34' 33.7"	629.72	--	631.86	Nov-98	--	7.74	--	624.12	--	--
WP-B7	40° 54' 13.5"	74° 34' 32.3"	627.62	--	629.49	Nov-98	5.57	5.61	623.92	623.88	0.04	623.91
WP-B10	40° 54' 14.9"	74° 34' 34.7"	630.42	633.12	632.74	Nov-98	--	9.11	--	623.63	--	--
WP-C1	40° 54' 12.6"	74° 34' 36.1"	632.81	--	633.51	Nov-98	--	9.87	--	623.64	--	--

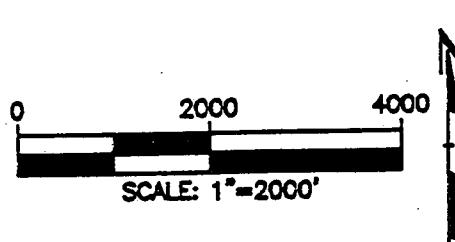
Table 3

Water Level Elevations (4th. QUARTER 1998)

L.E. Carpenter, Wharton, New Jersey

WELL LOCATION	LATITUDE	LONGITUDE	ELEVATION	OUTER CASING	INNER WELL	MEAS. DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS	CORRECTED WATER LEVEL ELEVATIONS
WP-C2	40° 54' 12.5"	74° 34' 35.6"	633.02	--	634.46	Nov-98	--	8.85	--	625.61	--	--
WP-C3	40° 54' 12.4"	74° 34' 36.4"	631.00	--	632.64	Nov-98	--	7.83	--	624.81	--	--
WP-C4	40° 54' 12.8"	74° 34' 35.9"	632.44	--	633.27	Nov-98	--	9.57	--	623.70	--	--
production well	40° 54' 13.0"	74° 34' 38.6"	634.43	635.41	--	--	--	--	--	--	--	--

* Elevation measured at the top of a 3.33 ft. Staff gauge. Water depth based on a visual observation of the water level on the Staff gauge.



QUADRANGLE LOCATION

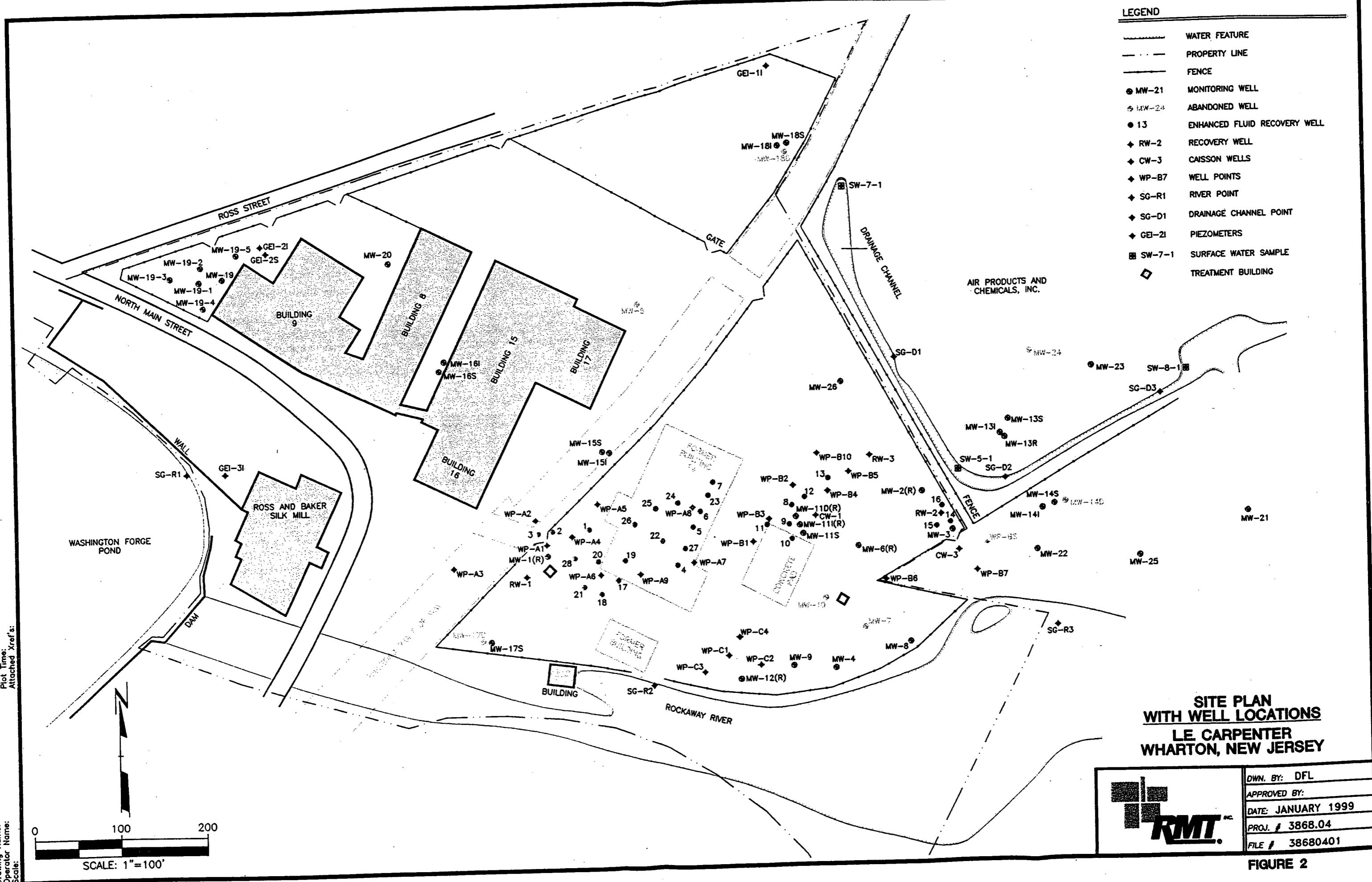
SOURCE: BASE MAP FROM DOVER,
NEW JERSEY, 7.5 MINUTE USGS
QUADRANGLE, DATED 1981.

SITE LOCATOR MAP LE CARPENTER WHARTON, NEW JERSEY

DWN. BY: DFL
APPROVED BY:
DATE: APRIL 1998
PROJ. # 3868.02
FILE # 38680208



FIGURE 1

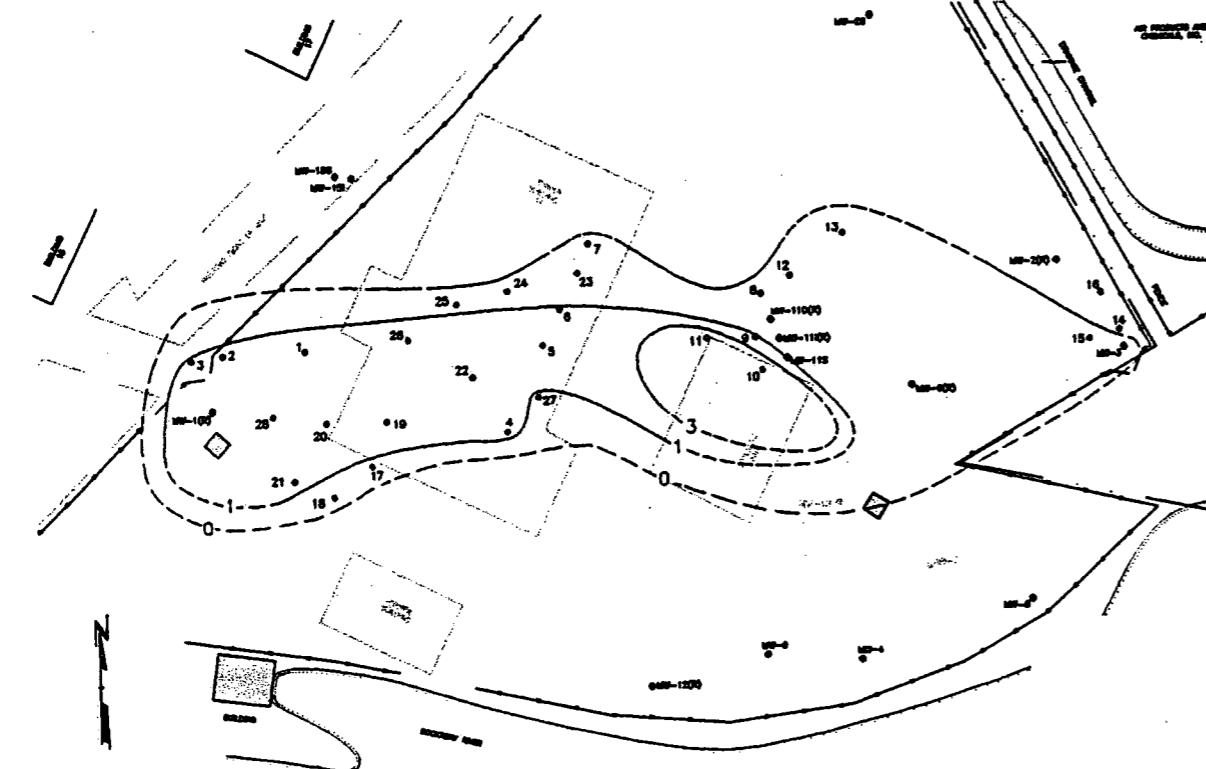


**SITE PLAN
WITH WELL LOCATIONS**

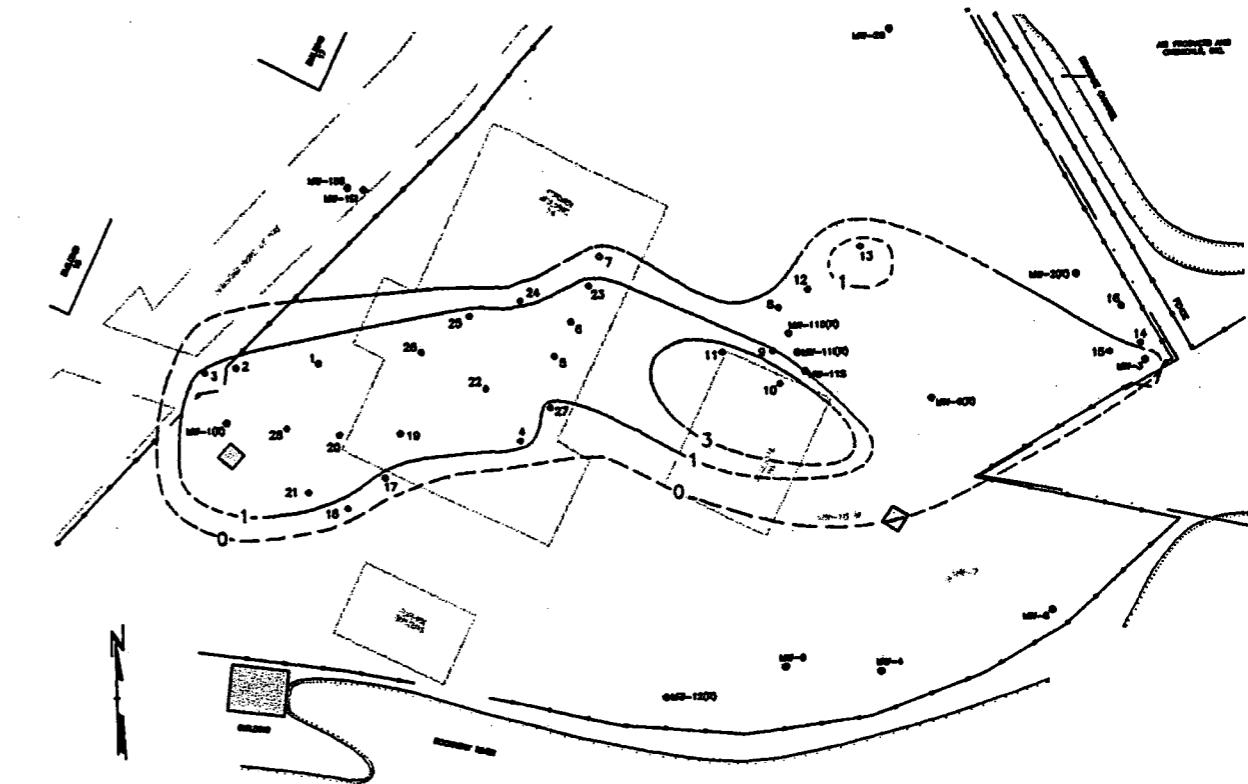


N. BY: DFL
PROVED BY:
TE: JANUARY 1999
OJ. # 3868.04
E# 38680401

FIGURE 2

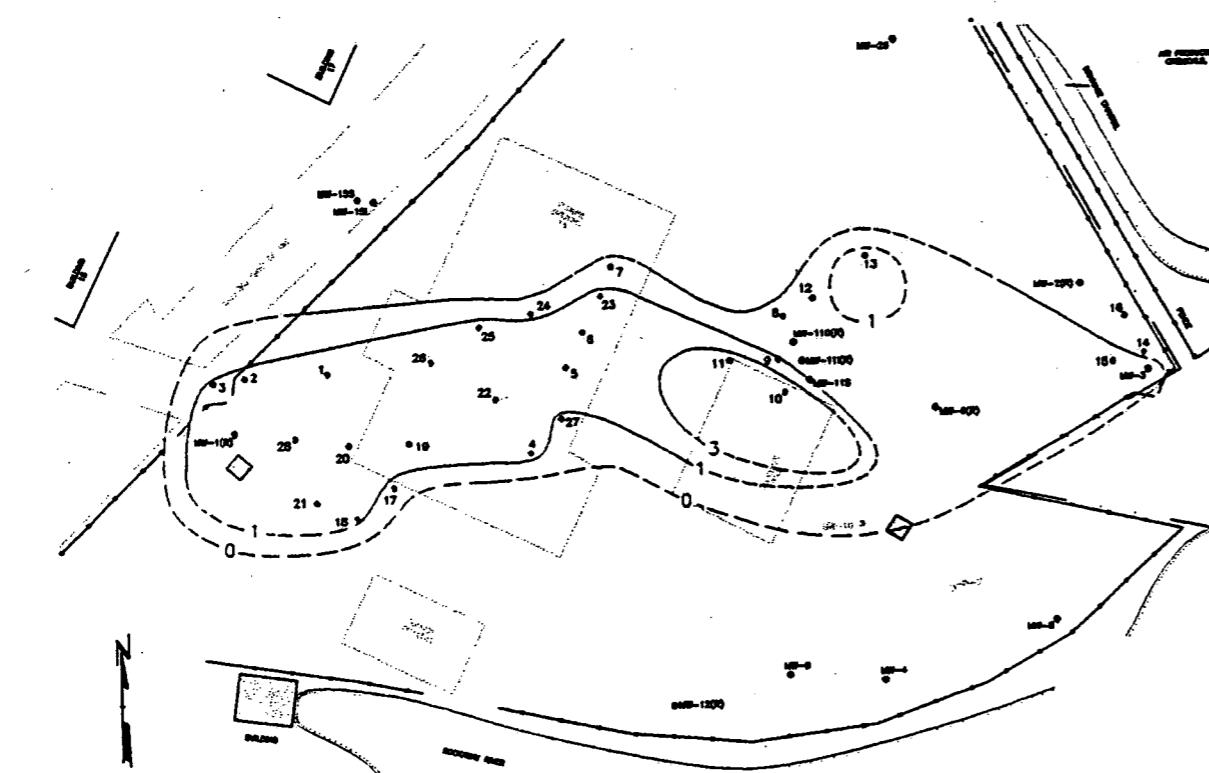


EFR EVENT #13 (OCTOBER 22, 1998)



EFR EVENT #14 (NOVEMBER 20, 1998)

PLOT DATA
Drawing Name:
Operator Name:
Scale:



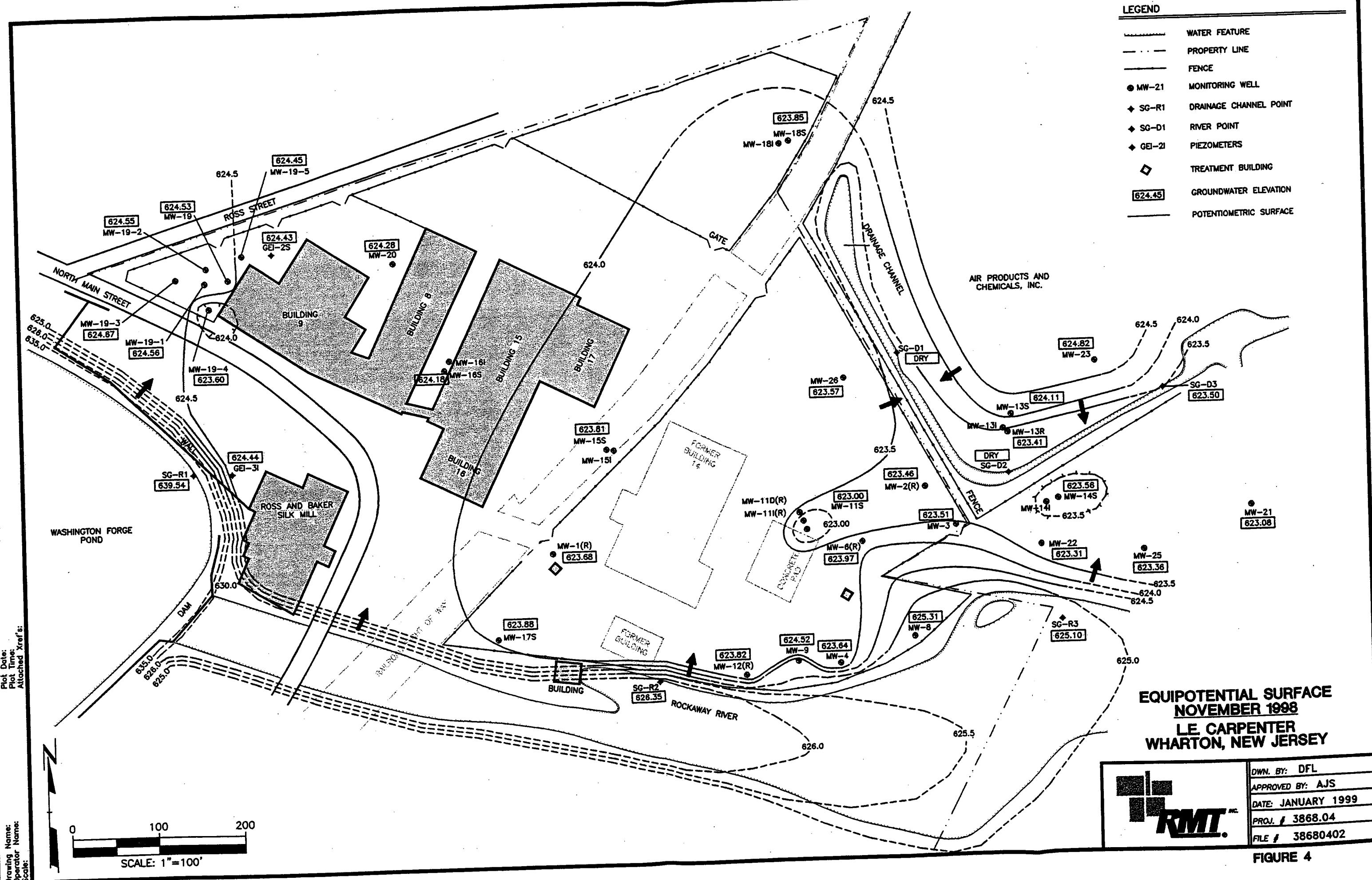
EFR EVENT #15 (DECEMBER 18, 1998)

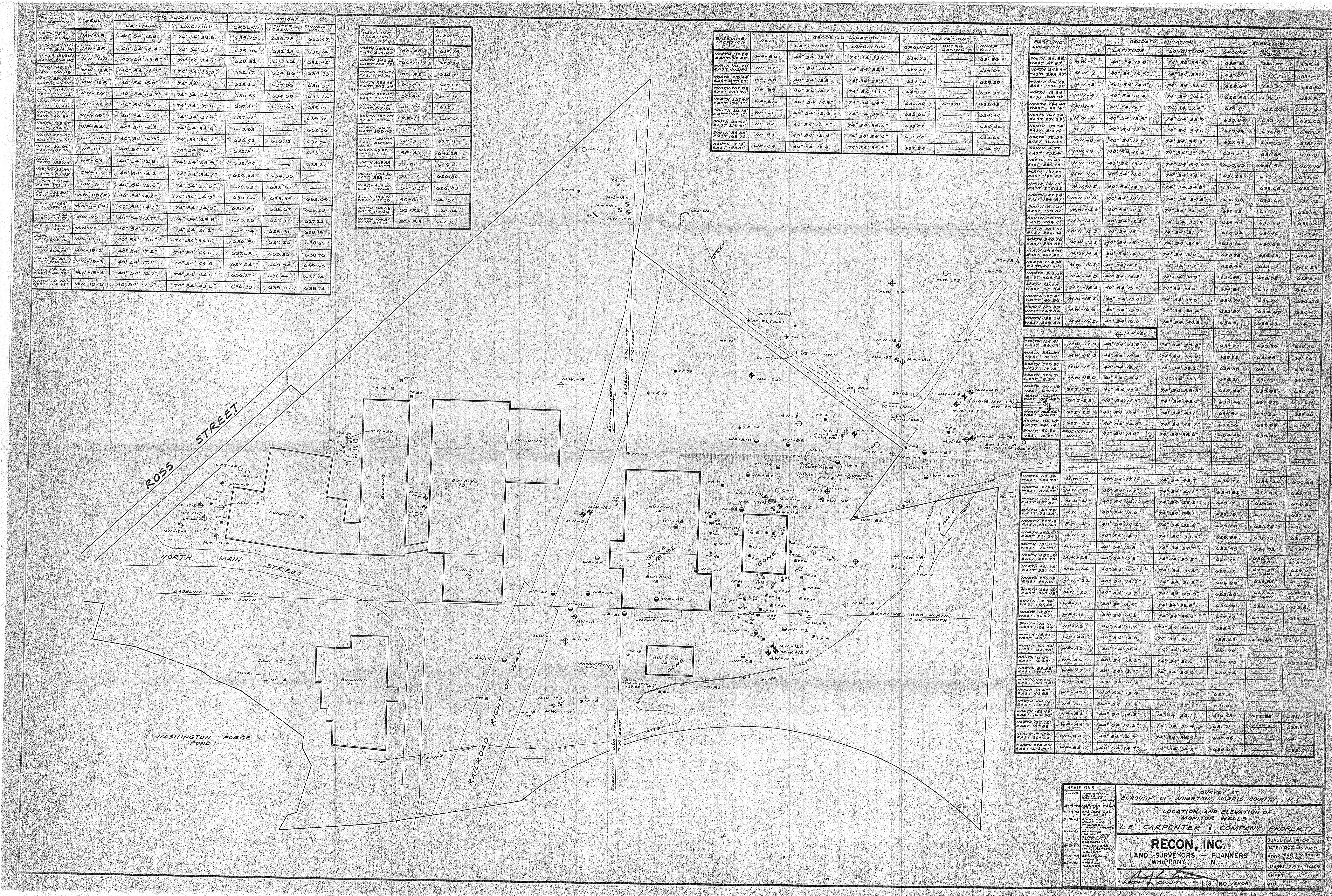
ENHANCED FLUID RECOVERY
SUMMARY FIGURES
LE CARPENTER
WHARTON, NEW JERSEY

	DWN. BY: DFL APPROVED BY: DATE: JANUARY 1999 PROJ. # 3868.04 FILE # 38680403
--	--

FIGURE 3

LEGEND	
.....	WATER FEATURE
- - -	PROPERTY LINE
—	FENCE
● MW-21	MONITORING WELL
◆ SG-R1	DRAINAGE CHANNEL POINT
◆ SG-D1	RIVER POINT
◆ GEI-21	PIEZOMETERS
◇	TREATMENT BUILDING
624.45	GROUNDWATER ELEVATION
—	POTENTIOMETRIC SURFACE



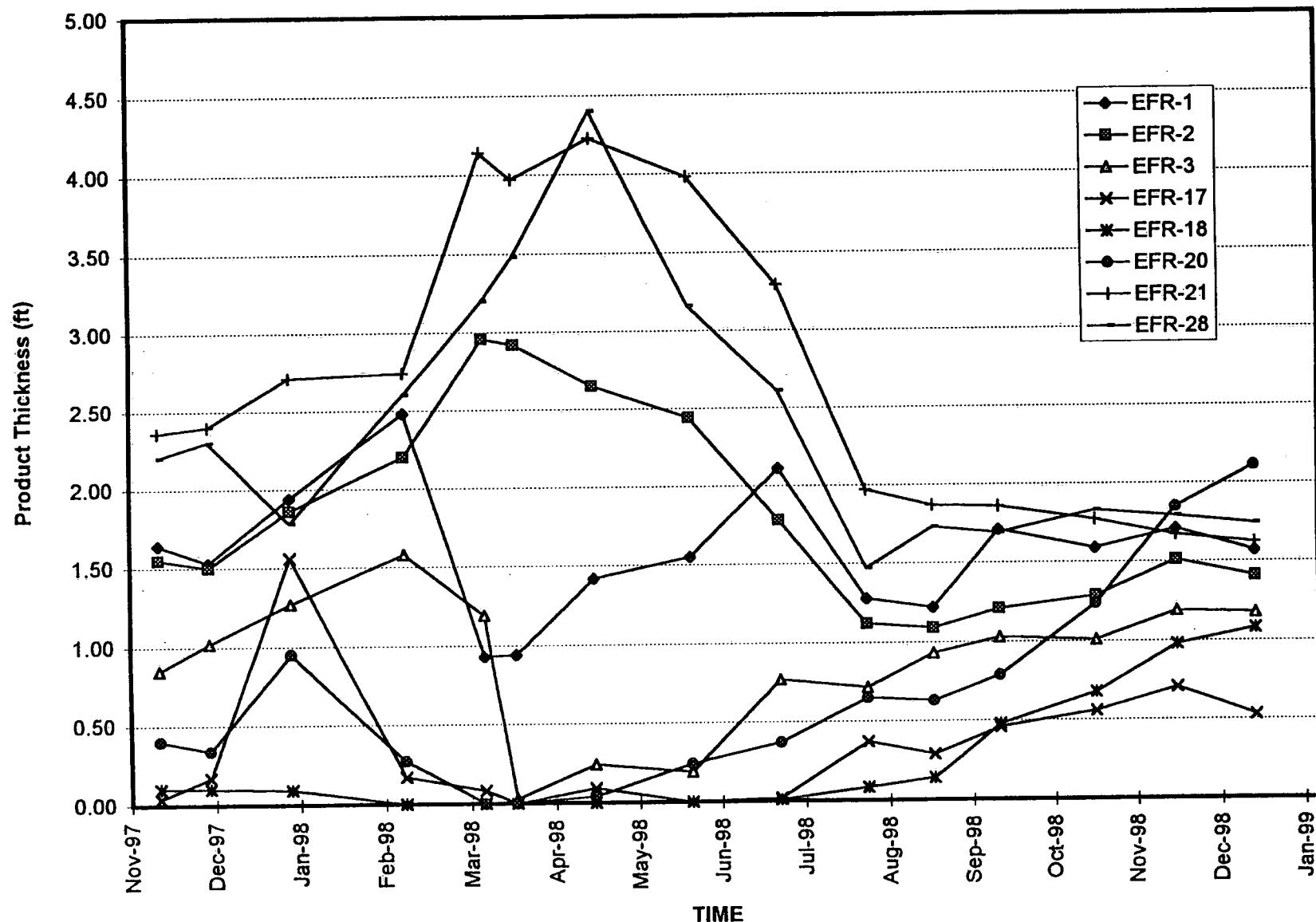




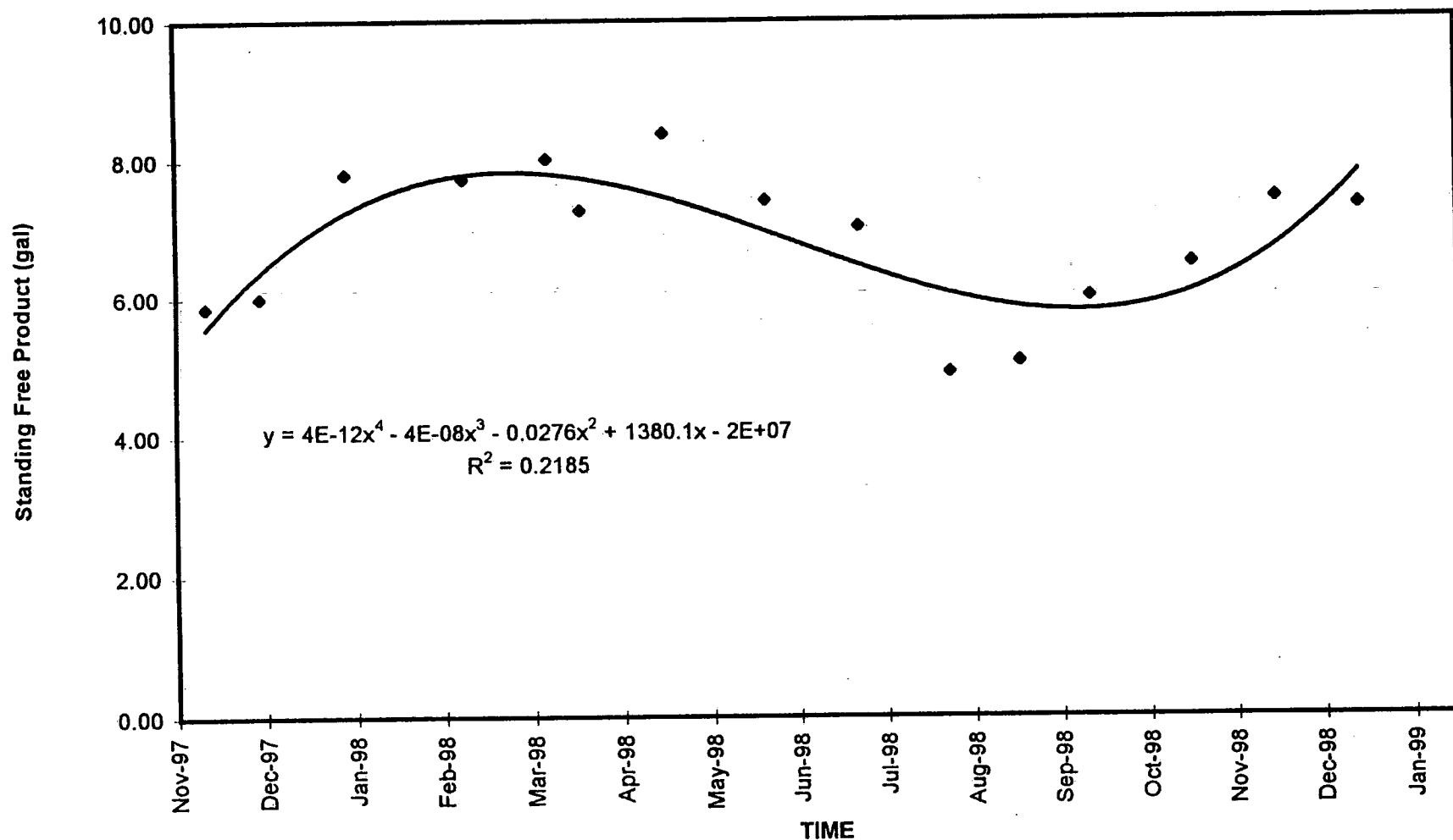
Appendix A

Free Product Fluctuation Charts

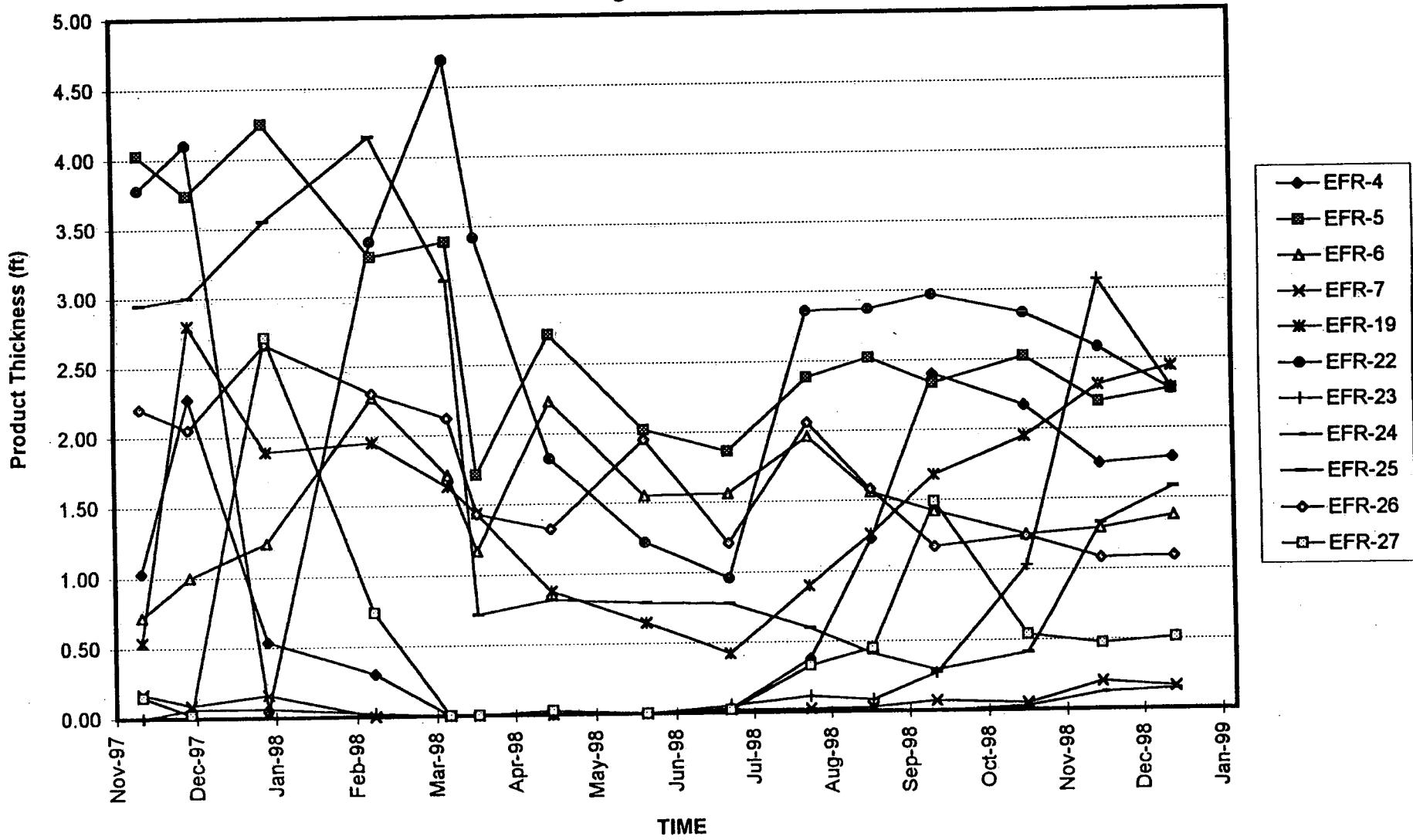
Free Product Changes vs. Time
Western Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998



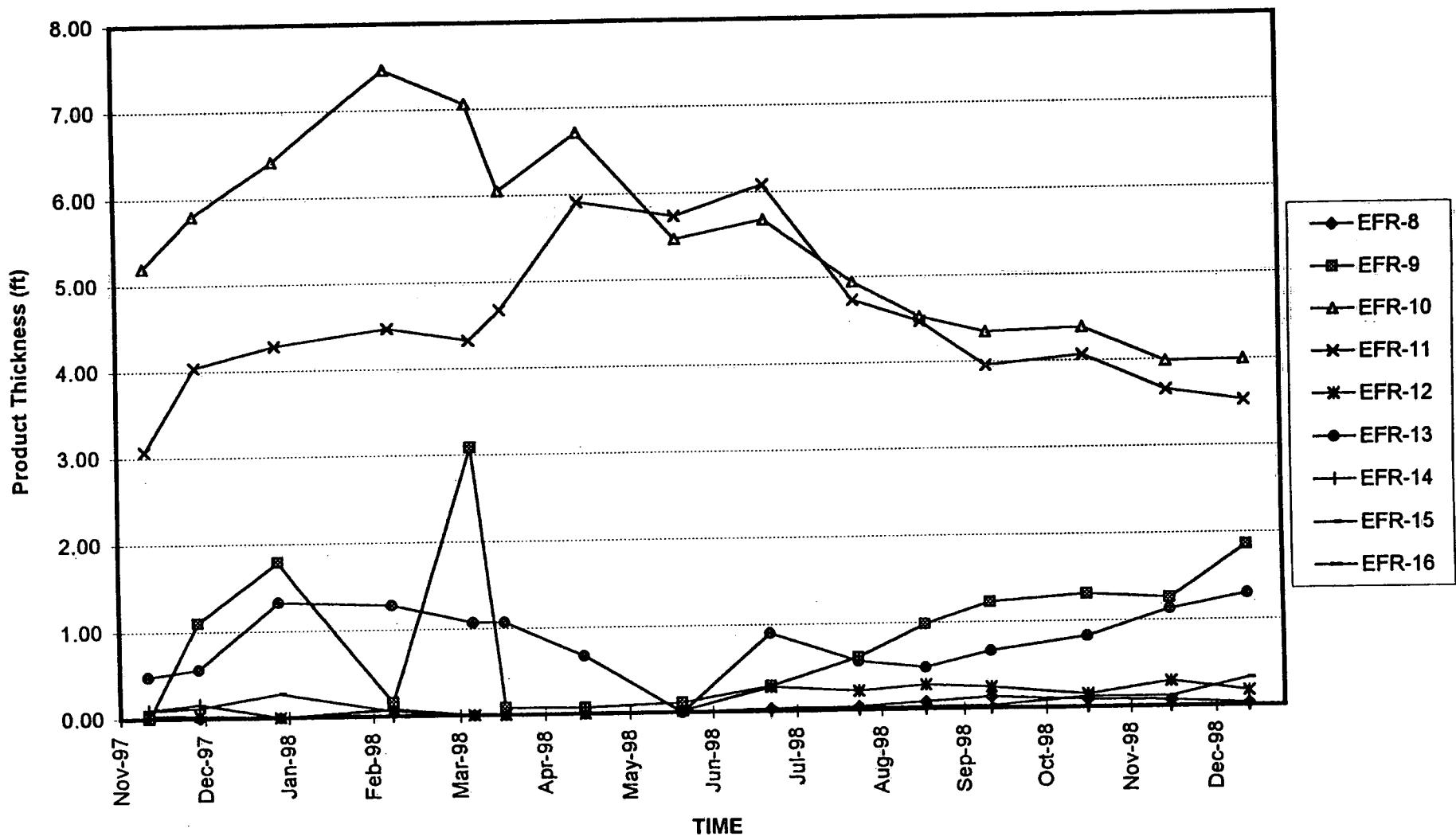
Free Standing Product vs. Time
Western Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998



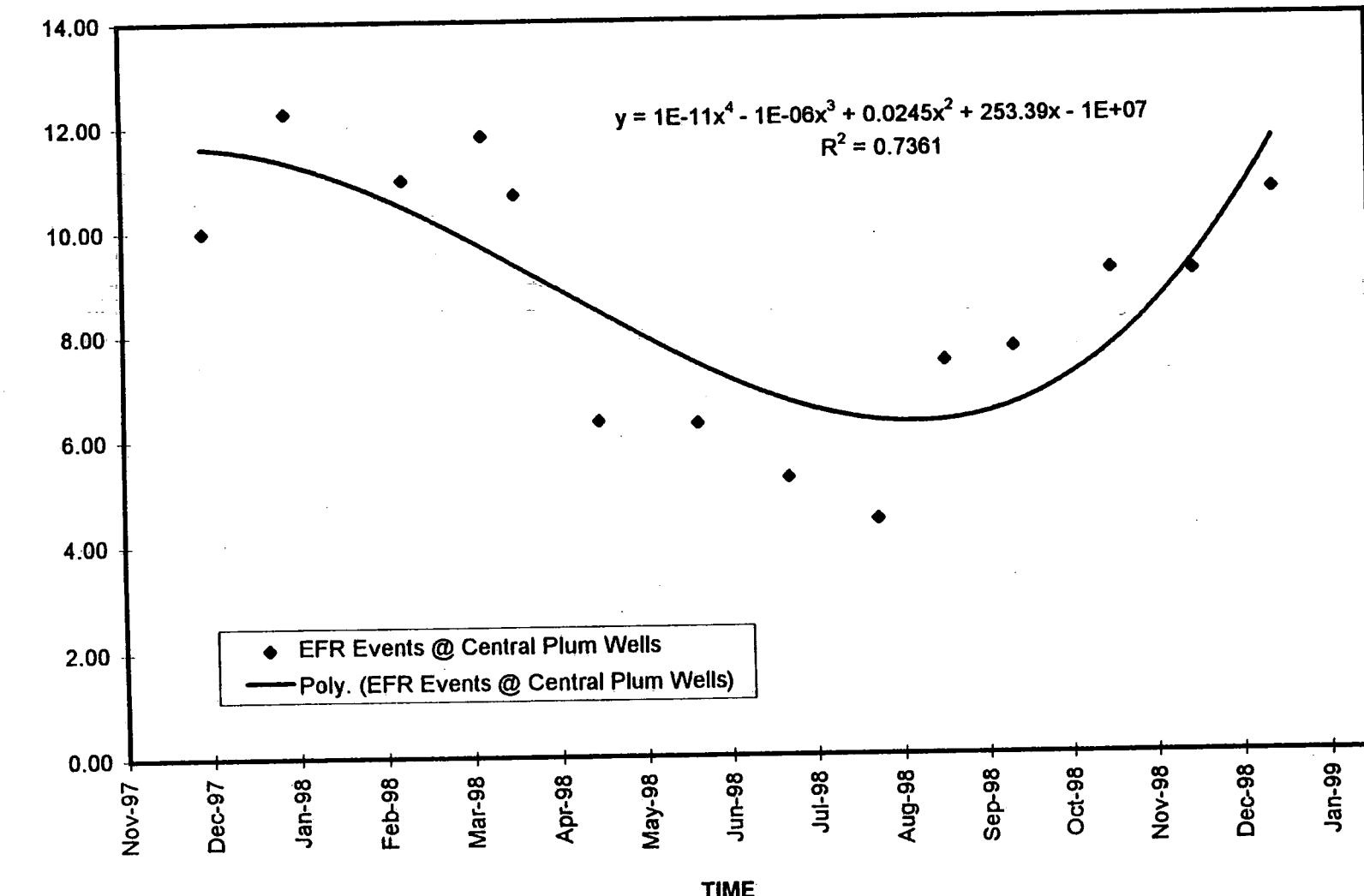
Free Product Changes vs. Time
Central Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998



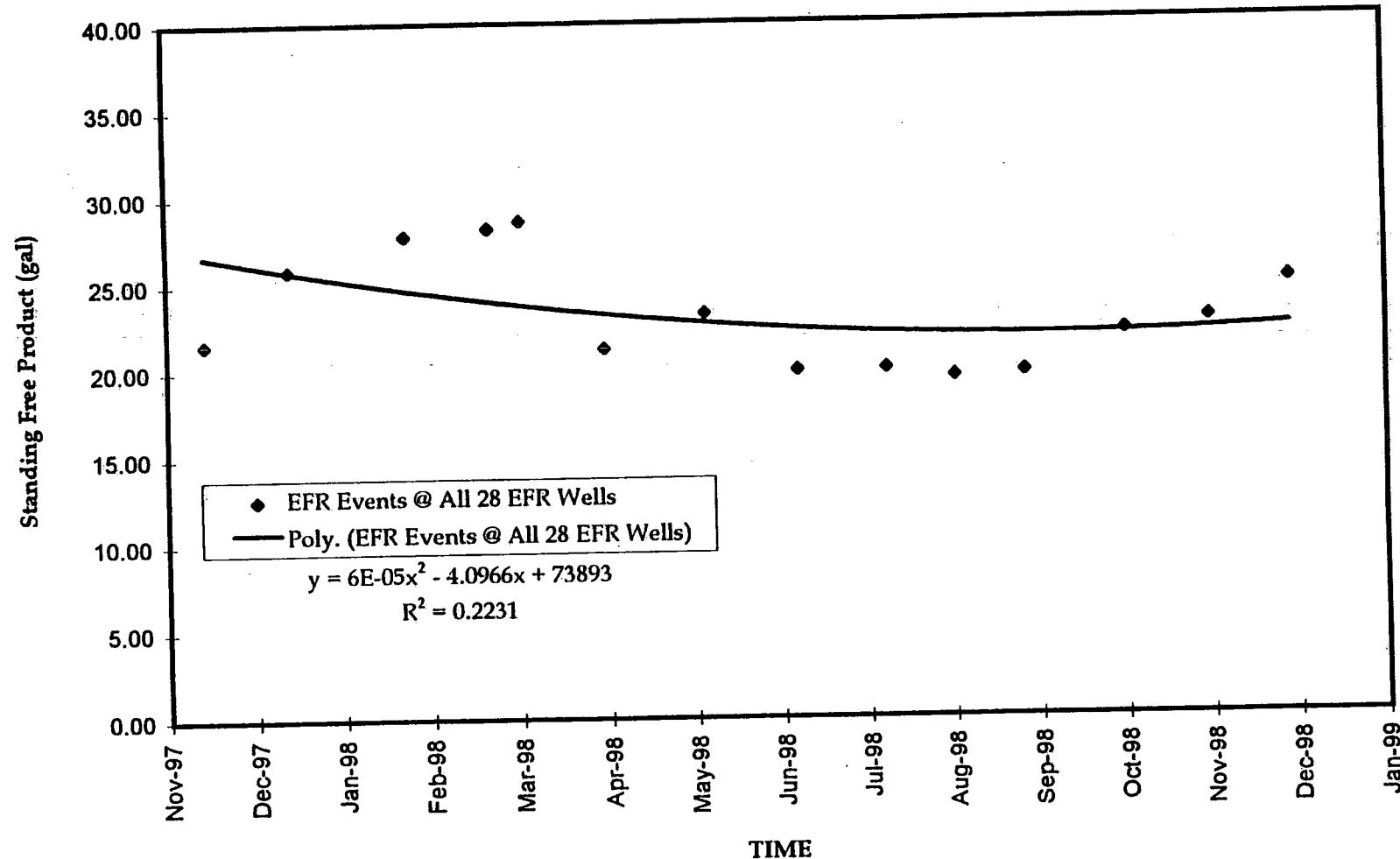
Free Product Changes vs. Time
Eastern Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998



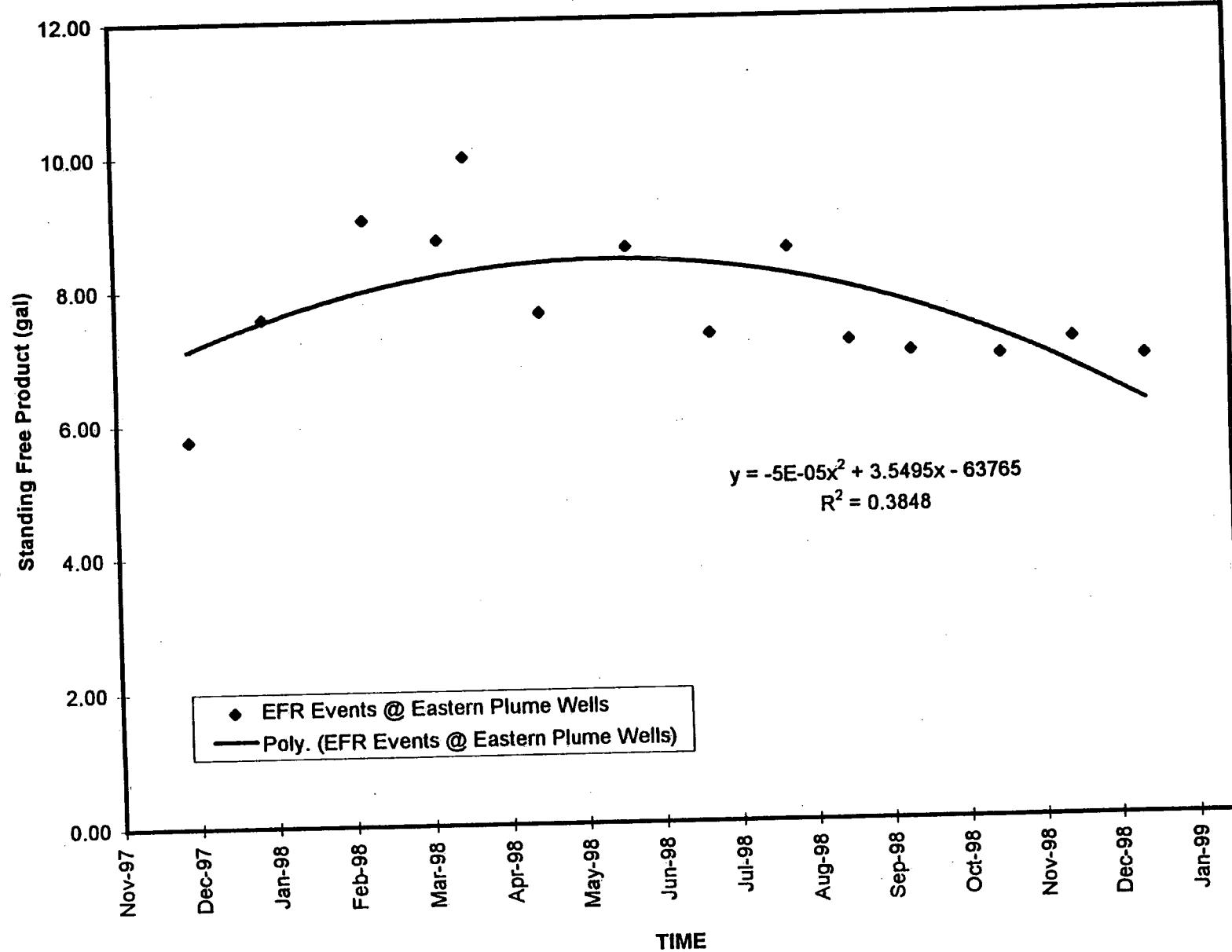
Free Standing Product vs. Time
Central Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998

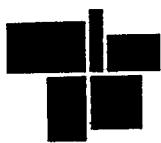


Total Site Free Standing Product vs. Time
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998



Free Standing Product vs. Time
Eastern Portion of Plume
L.E. Carpenter, Wharton, New Jersey
Through 4th Quarter 1998





Appendix B

Well Sampling Data

Monitoring Well Data

Client: RMT **Project:** LE Carpenter
Job No: J 322 **Date Sampled:** 11/20/98 **Analyst:** M. Morse

Well ID	MW-15I	MW-22R	MW-25R	MW-14I	MW-4
Depth to Water From TOC feet (before purging)	12.91	4.82	3.86	4.89	8.86
Depth to Water From TOC feet (after purging)	12.98	5.54	7.52	5.00	9.26
Depth to Water From TOC feet (before sampling)	12.91	4.84	4.04	4.89	8.96
Depth to Bottom From TOC feet	40.14	8.81	9.11	43.32	18.31
PID Reading from Well Casing (ppm)	0.00	0.00	0.00	0.00	0.00
pH before Purge	7.00	6.07	6.31	7.75	6.59
Temp. before Purge (°C)	14.60	11.20	10.80	12.30	12.90
Diss. Oxygen before Purge (ppm)	5.78	5.58	1.45	3.59	1.01
Cond. before Purge (umhos/cm)	383.00	367.00	586.00	288.00	434.00
Water Volume in Well (gal.)	4.90	0.70	0.90	6.90	1.70
Purge Method	peristaltic pump				
Purge Start Time	12:38	9:49	10:02	9:45	13:18
Purge End Time	13:00	9:59	10:12	10:09	13:25
Purge Rate (gpm)	0.70	0.30	0.30	1.00	0.90
Volume Purged (gal.)	15.00	3.00	3.00	21.00	6.00
pH after Purge	6.88	6.33	6.38	7.81	6.63
Temp. after Purge (°C)	13.80	11.60	11.40	12.20	12.90
Diss. Oxygen after Purge (ppm)	1.03	1.07	1.28	2.67	0.79
Cond. after Purge (umhos/cm)	504.00	470.00	589.00	299.00	430.00
pH after Sample	6.95	6.31	6.38	7.78	6.61
Temp. after Sample (°C)	14.20	11.10	10.50	12.10	13.00
Diss. Oxygen after Sampling (ppm)	1.08	1.13	1.32	2.59	0.83
Cond. after Sample (umhos/cm)	499.00	452.00	585.00	296.00	430.00
Sampling Method	teflon bailer				
Time of Sampling	13:10	10:22	10:35	10:30	13:30



Appendix C

MW-22R Contaminant of Concern

Concentration Trends

MW-22R

Contaminants of Concern Concentrations

Time Frame	QUARTER	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	DEHP (ug/L)
1	21-Feb-95	ND	57	ND	260	6500
2	13-Jun-95	ND	311	ND	955	380
3	13-Sep-95	ND	171	ND	693	NS
4	07-Dec-95	ND	123	ND	494	320
5	17-Sep-96	ND	359	ND	1320	NS
6	12-Dec-96	ND	320	ND	1330	ND
7	14-Aug-97	ND	5,730	ND	32,900	7,500
8	03-Oct-97	ND	11,400	348	66,000	NS
9	12-Mar-98	ND	4,070	348	20,600	NS
10	26-Aug-98	ND	2,260	ND	11,300	5,800
11	28-Aug-98	ND	1,880	ND	10,300	NS
12	18-Dec-98	ND	1,650	ND	7,230	1,100
NJDEP GWQS (ug/L)		NA	700	1000	40	50
ROD Discharge Criteria (ug/L)		NA	350	500	20	30

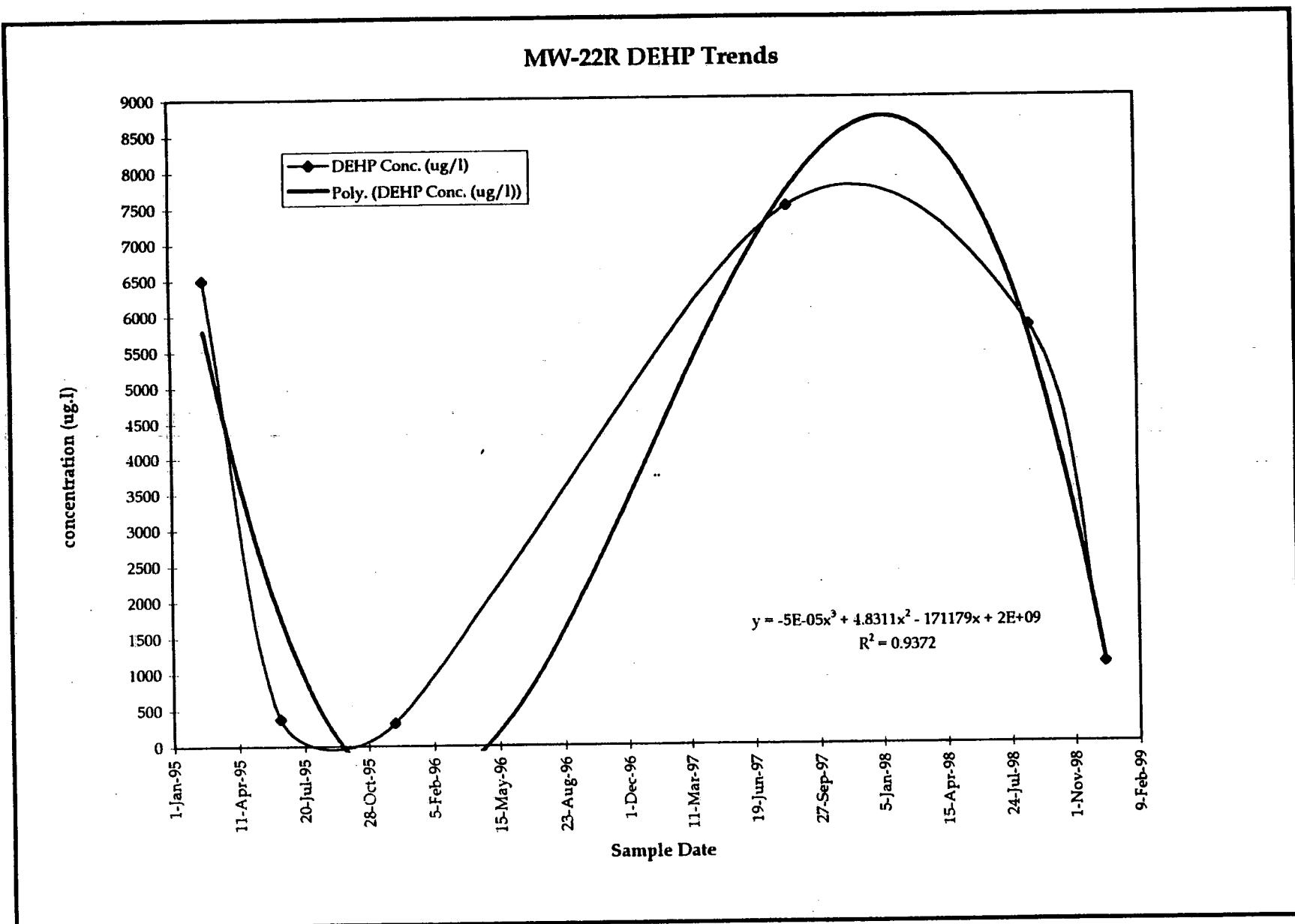
**NOTES

Concentrations in bold exceed both the ROD discharge criteria and NJDEP GWQS

ND = Not detected above method detection limits

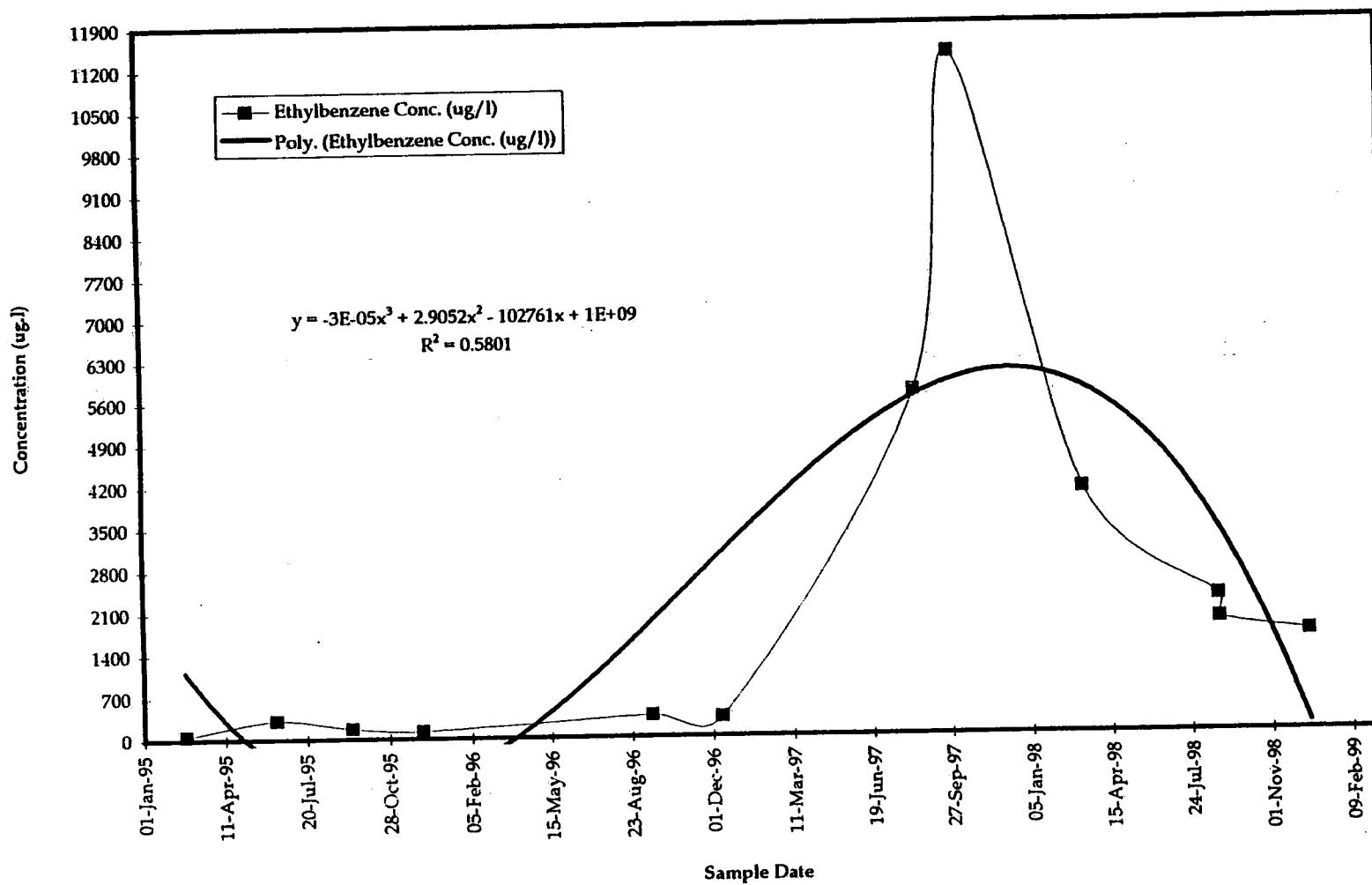
NS = Not Sampled

MW-22R
Contaminants of Concern
Concentration vs. Time

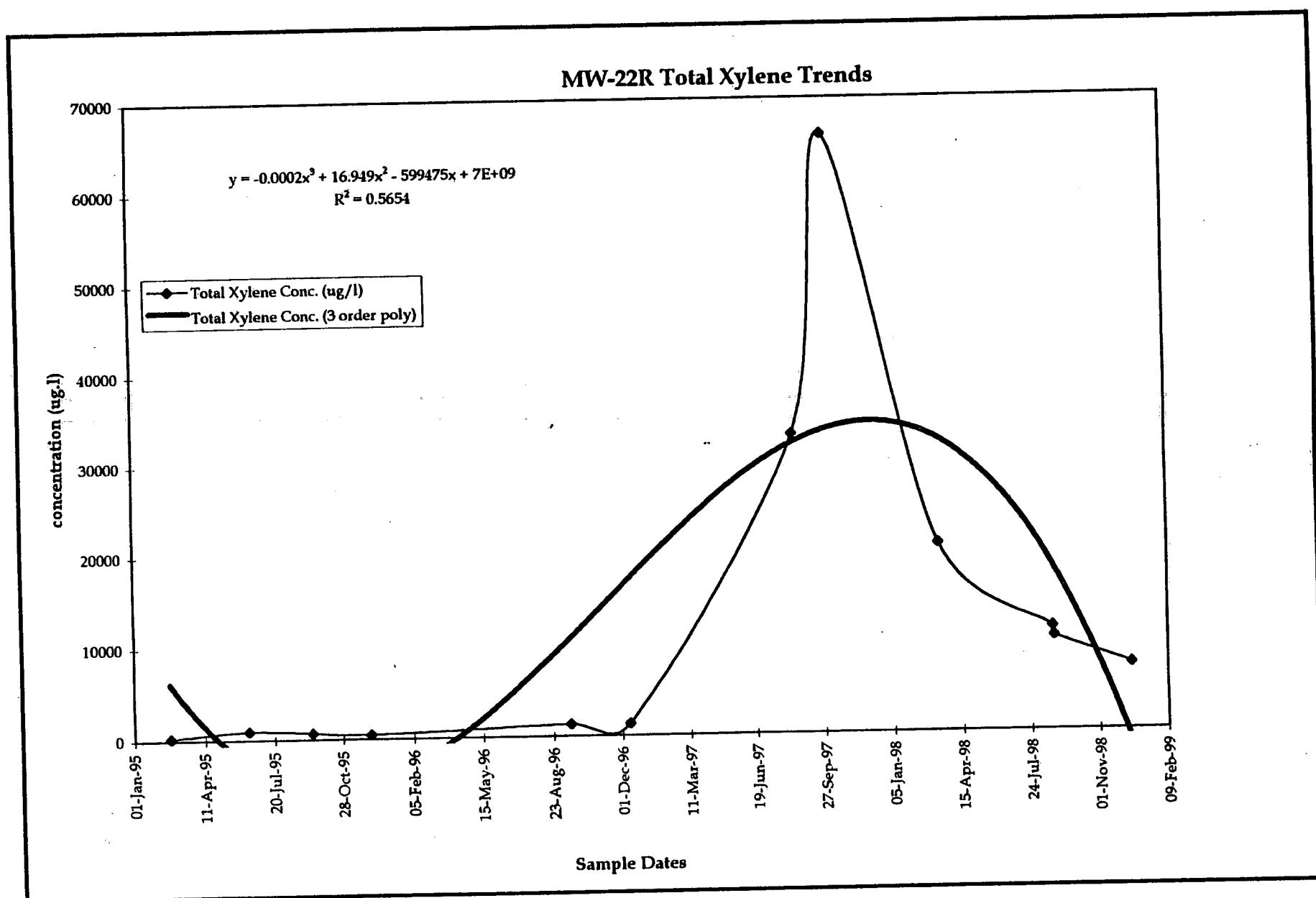


MW-22R
CONTAMANT OF CONCERN
Concentration vs. Time

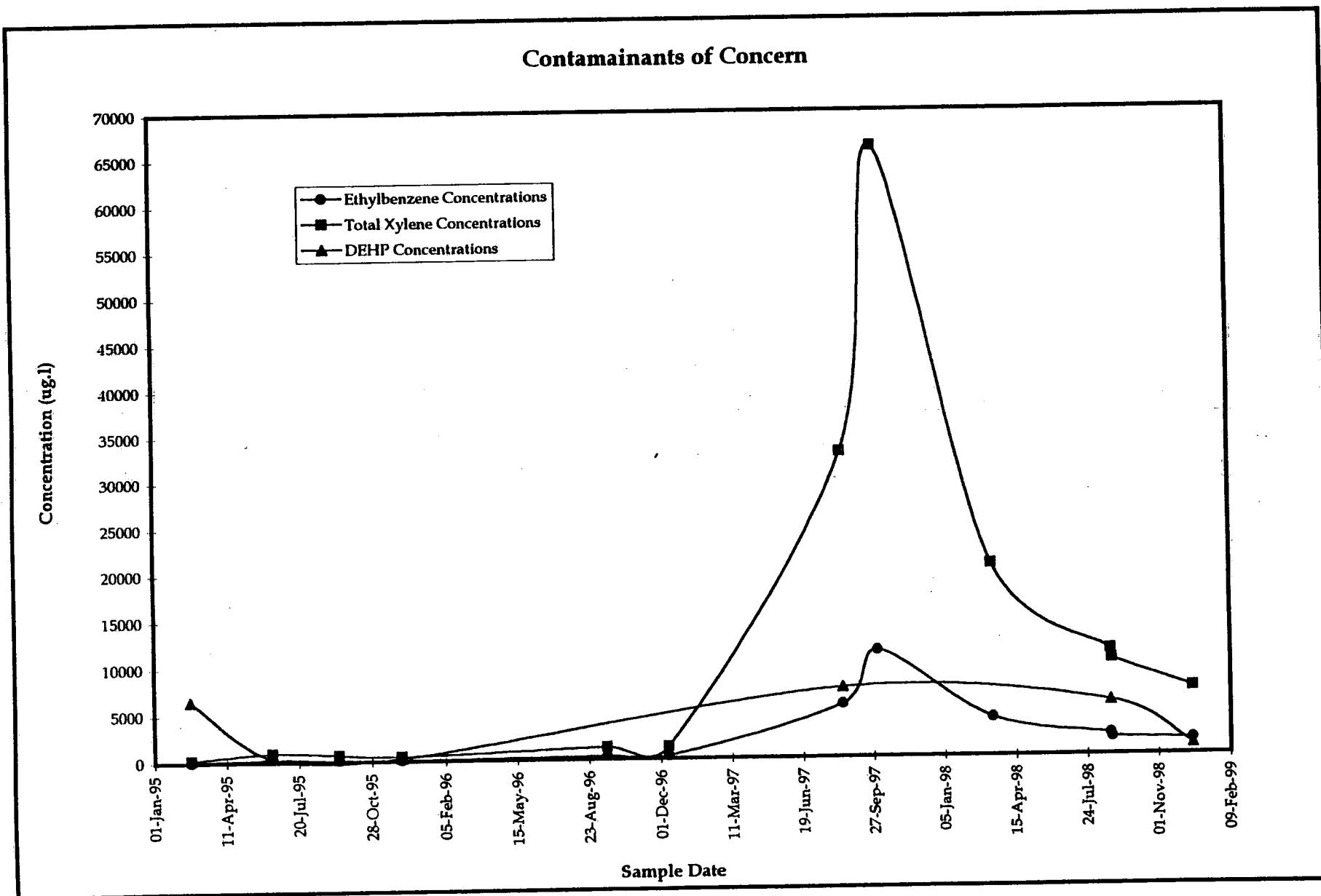
MW-22R Ethylebenzene Trends

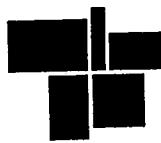


MW-22R
Contaminants of Concern
Concentration vs. Time



MW-22R
Contaminants of Concern
Concentration vs. Time





Appendix D

STL Envirotech Correspondence



STL Envirotech
777 New Durham Road
Edison, NJ 08817
Tel: (732) 549-3900
Fax: (732) 549-3679
www.stl-inc.com

January 15, 1999

R.M.T.
222 South Riverside Plaza
Suite 280
Chicago, IL 60606

Attn.: Nick Clevett

Dear Mr. Clevett,

This letter is in regard to the L.E. Carpenter project, which was sampled on November 20, 1998. In reference to Envirotech sample number 98398 for job J322. The sample ID was inadvertently labeled as MW14J by Envirotech field sampling personnel. The sample should have been labeled as MW 14I.

Envirotech apologizes for any inconvenience this error may have caused, and has taken the proper steps to insure that this error does not happen in the future

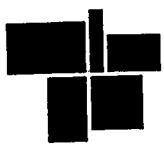
Sincerely,

Paul Simms
Project Manager

Other Laboratory Locations:
• 149 Rangeway Road, North Billerica MA 01862
• 16203 Park Row, Suite 110, Houston TX 77084
• 200 Monroe Turnpike, Monroe CT 06468
• 120 Southcenter Court, Suite 300, Morrisville NC 27560
• 315 Fullerton Avenue, Newburgh NY 12550

- 11 East Olive Road, Pensacola FL 32514
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippany NJ 07981
- 35 South Park Drive, Colchester VT 05446

a part of
Severn Trent Services Inc



Appendix E

Laboratory Report

ENVIROTECH RESEARCH, INC.

777 New Durham Road
Edison, New Jersey 08817
Tel: (732) 549-3900
Fax: (732) 549-3679
www.enviro-lab.com

December 14, 1998

Residuals Management Technologies, Inc.
999 Plaza Drive , Suite 370
Schaumburg, IL 60173-5407

Attention: Mr. Nick Clevett

Re: Job No. J322 - L.E. Carpenter

Dear Mr. Clevett:

Enclosed are the results you requested for the following sample(s) received at our laboratory on November 20, 1998:

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
98395	MW-15I	BTEX (GC), Bis-2-Ethylhexylphthalate
98396	MW-22R	BTEX (GC), Bis-2-Ethylhexylphthalate
98397	MW-25R	BTEX (GC), Bis-2-Ethylhexylphthalate
98398	MW-14J	BTEX (GC), Bis-2-Ethylhexylphthalate
98399	MW-4	BTEX (GC), Bis-2-Ethylhexylphthalate
98400	MW-15ID	BTEX (GC), Bis-2-Ethylhexylphthalate
98401	Field_Blank	BTEX (GC), Bis-2-Ethylhexylphthalate
98402	Trip_Blank	BTEX (GC)

An invoice for our services is also enclosed. If you have any questions please contact your Project Manager, Paul Simms, at (732) 549-3900.

Very truly yours,



Michael J. Urban
Laboratory Manager

ENVIROTECH RESEARCH, INC.

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ENVIROTECH RESEARCH, INC.

Client ID: MW15S
Site: RNA

Lab Sample No: 99777
Lab Job No: J534

Date Sampled: 12/01/98
Date Received: 12/01/98
Date Analyzed: 12/04/98
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid4019.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW15S
Site: RNA

Lab Sample No: 99777
Lab Job No: J534

Date Sampled: 12/01/98
Date Received: 12/01/98
Date Extracted: 12/03/98
Date Analyzed: 12/10/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9421.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS METHOD 625

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

Parameter

bis(2-Ethylhexyl)phthalate

ND

1.2

ENVIROTECH RESEARCH, INC.

Client ID: MW17S
Site: RNA

Lab Sample No: 99779
Lab Job No: J534

Date Sampled: 12/01/98
Date Received: 12/01/98
Date Extracted: 12/03/98
Date Analyzed: 12/10/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9423.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	6.0	1.1

ENVIROTECH RESEARCH, INC.

Client ID: MW17S
Site: RNA

Lab Sample No: 99779
Lab Job No: J534

Date Sampled: 12/01/98
Date Received: 12/01/98
Date Analyzed: 12/04/98
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid4021.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW-15I
Site: L.E. Carpenter

Lab Sample No: 98395
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9278.d

Matrix: WATER
Level: LOW
Sample Volume: 940 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate	11	1.1
----------------------------	----	-----

ENVIROTECH RESEARCH, INC.

Client ID: MW-15I
Site: L.E. Carpenter

Lab Sample No: 98395
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8367.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	0.53	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW-22R
Site: L.E. Carpenter

Lab Sample No: 98396
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9282.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 10.0

SEMI-VOLATILE ORGANICS - GC/MS METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	1100	12

ENVIROTECH RESEARCH, INC.

Client ID: MW-22R
Site: L.E. Carpenter

Lab Sample No: 98396
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8383.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/PID METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	ND	40.0
Toluene	ND	28.0
Ethylbenzene	1650	28.0
Xylene (Total)	7230	100

ENVIROTECH RESEARCH, INC.

Client ID: MW-25R
Site: L.E. Carpenter

Lab Sample No: 98397
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9269.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

**SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units:</u> ug/l	<u>Method Detection Limit</u> <u>Units:</u> ug/l
bis(2-Ethylhexyl)phthalate	1.9	1.2

ENVIROTECH RESEARCH, INC.

Client ID: MW-25R
Site: L.E. Carpenter

Lab Sample No: 98397
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8368.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units:</u> ug/l	<u>Method Detection Limit</u> <u>Units:</u> ug/l
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW-14J
Site: L.E. Carpenter

Lab Sample No: 98398
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9270.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

**SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units:</u> ug/l	<u>Method Detection Limit</u> <u>Units:</u> ug/l
bis(2-Ethylhexyl)phthalate	ND	1.2

ENVIROTECH RESEARCH, INC.

Client ID: MW-14J
Site: L.E. Carpenter

Lab Sample No: 98398
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8369.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW-4
Site: L.E. Carpenter

Lab Sample No: 98399
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/04/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9294.d

Matrix: WATER
Level: LOW
Sample Volume: 990 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 5.0

**SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625**Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate 650 5.4

ENVIROTECH RESEARCH, INC.

Client ID: MW-4
Site: L.E. Carpenter

Lab Sample No: 98399
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8370.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	9.3	0.14
Xylene (Total)	3.3	0.50

ENVIROTECH RESEARCH, INC.

Client ID: MW-15ID
Site: L.E. Carpenter

Lab Sample No: 98400
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9280.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS METHOD 625

Parameter

Analytical Result Units: ug/l

Method Detection Limit Units: ug/l

bis(2-Ethylhexyl)phthalate	9.8	1.1
----------------------------	-----	-----

ENVIROTECH RESEARCH, INC.

Client ID: MW-15ID
Site: L.E. Carpenter

Lab Sample No: 98400
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8371.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	0.22	0.14
Xylene (Total)	0.80	0.50

ENVIROTECH RESEARCH, INC.

Client ID: Field_Blank
Site: L.E. Carpenter

Lab Sample No: 98401
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9281.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate

1.3

1.1

ENVIROTECH RESEARCH, INC.

Client ID: Field_Blank
Site: L.E. Carpenter

Lab Sample No: 98401
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8372.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH, INC.

Client ID: Trip_Blank
Site: L.E. Carpenter

Lab Sample No: 98402
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8373.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50

ENVIROTECH RESEARCH INC.

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE ___ OF ___

Name (for report and invoice) <i>Mr. Nick Clevett</i>	Samplers Name (Printed) <i>M. Morse/R. Toegeood</i>			Site/Project Identification <i>LE Carpenter</i>			
Company <i>RMT Inc.</i>	P.O. #			State (Location of site): NJ: <input checked="" type="checkbox"/> NY: <input type="checkbox"/> Other:			
Address <i>999 Plaza Dr Suite 370</i>				Regulatory Program:			
City <i>Schaumburg IL</i>	Analysis Turnaround Time Standard <input checked="" type="checkbox"/> Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input type="checkbox"/>			ANALYSIS REQUESTED (ENTER X BELOW TO INDICATE REQUEST)			
Phone Fax				<i>BTEX</i>	<i>DEPA</i>		
Sample Identification		Date <i>11/20/98</i>	Time <i>13:10</i>	Matrix <i>Waters</i>	No. of Cont. <i>4</i>	X X	LAB USE ONLY
<i>MW 15I</i>						X X	Project No: <i>801080</i>
<i>MW 22R</i>			<i>10:22</i>		<i>4</i>	X X	Job No: <i>J322</i>
<i>MW 25R</i>			<i>10:35</i>		<i>4</i>	X X	
<i>MW 14I</i>			<i>10:30</i>		<i>4</i>	X X	
<i>MW 4</i>			<i>13:30</i>		<i>4</i>	X X	
<i>MW 15ID</i>			<i>-</i>		<i>4</i>	X X	
<i>Field Blank</i>			<i>13:05</i>		<i>3</i>	X X	
<i>Trip Blank</i>			<i>6:30</i>		<i>2</i>	X	
							Sample Numbers <i>98395 98396 98397 98398 98399 98400 98401 98402</i>
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH 6 = Other _____, 7 = Other _____						Soil:	
						Water:	<i>2 1</i>

Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by <i>M. Morse</i>	Company <i>Envirotech</i>	Date / Time <i>11/20/98 14:45</i>	Received by <i>R. Toegeood</i>	Company <i>Envirotech</i>
Relinquished by <i>2)</i>	Company	Date / Time <i>1</i>	Received by <i>2)</i>	Company
Relinquished by <i>3)</i>	Company	Date / Time <i>1</i>	Received by <i>3)</i>	Company
Relinquished by <i>4)</i>	Company	Date / Time <i>1</i>	Received by <i>4)</i>	Company

Laboratory Certifications: New Jersey (12543), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Water Levels/Free Product Measurements-L.E. Carpenter Site

11/20/98

Well ID	Product	Depth to Water
MW-1 (R)	11.63	12.88
MW-2 (R)	N	8.68
MW-3	8.69	11.46
MW-4	N	8.86
MW-6 (R)	8.41	8.74
MW-8	N	3.48
MW-9	N	5.66
MW-11S	9.53	12.84
MW-11IR	N	9.72
MW-11DR	N	7.52
MW-12R	N	10.51
MW-13S	N	7.12
MW-13(R)	N	7.18
MW-13I	N	7.18
MW-14S	N	4.85
MW-14I	N	4.89
MW-15S	N	12.96
MW-15I	N	12.91
MW-16S	N	10.29
MW-16I	N	10.75
MW-17S	N	10.91
MW-18S	N	7.41
MW-18I	N	7.17
MW-19	N	14.35
MW-20	N	12.49
MW-21	N	5.72
MW-22 (R)	N	4.82
MW-23	N	5.82
MW-25 (R)	N	3.86
MW-26	N	9.69
RW-1	Y	13.58
RW-2	N	8.25
RW-3	N	8.42
CW-1	N	9.51
CW-3	N	9.33
GEI-1I	N	6.84
GEI-2S	N	13.24
GEI-2I	N	13.28
GEI-3I	N	15.41
WP-A1	11.94	12.16
WP-A2	N	DRY
WP-A3	N	11.69
WP-A4	13.12	14.22
WP-A5	N	14.13
WP-A6	13.51	14.22
WP-A7	11.26	13.22

Well ID	Product	Depth to Water
WP-A8	13.81	16.28
WP-A9	15.97	17.72
WP-B1	8.98	9.55
WP-B2	8.65	8.71
WP-B3	N	9.57
WP-B4	Y	8.40
WP-B5	7.51	7.65
WP-B6	N	7.74
WP-B7	5.57	5.61
WP-B10	N	9.11
WP-C1	N	9.87
WP-C2	N	8.85
WP-C3	N	7.83
WP-C4	N	9.57
SG-D3	N	0.40
SG-D2	N	DRY
SG-D1	N	DRY
SG-R3	N	1.05
SGR-1	N	1.35
SGR-2	N	0.84
EFR-1	12.78	14.49
EFR-2	13.90	15.41
EFR-3	15.31	16.50
EFR-4	15.06	16.81
EFR-5	12.99	15.18
EFR-6	12.96	14.25
EFR-7	10.67	10.87
EFR-8	8.98	9.05
EFR-9	8.92	10.18
EFR-10	10.35	14.33
EFR-11	9.42	13.07
EFR-12	8.20	8.49
EFR-13	7.82	8.95
EFR-14	N	7.14
EFR-15	7.29	7.41
EFR-16	N	7.01
EFR-17	13.11	13.82
EFR-18	12.43	15.28
EFR-19	16.94	19.25
EFR-20	13.43	15.28
EFR-21	12.00	13.67
EFR-22	15.11	17.67
EFR-23	11.81	14.68
EFR-24	14.11	14.23
EFR-25	15.06	16.39
EFR-26	15.89	16.97

Well ID	Product	Depth to Water
EFR-27	14.64	15.11
EFR-28	12.94	14.73
MW-19-1	N	14.30
MW-19-2	N	14.21
MW-19-3	N	14.98
MW-19-4	N	14.14
MW-19-5	N	14.29

Monitoring Well Data

Client: RMT

Project: LE Carpenter

Date Sampled: 11/20/98

Job No.: J 322

Name of Analyst: Matt Morse

Names & Signatures of

Samplers: Matt Morse

Matt Morse

Rick Toogood

R. Toogood

**INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
ENVIROTECH RESEARCH, INC.**

**777 NEW DURHAM ROAD, EDISON, NJ
08817
(732) 549-3900**

Job No: J322

Site: L.E. Carpenter

Client: Residuals Management Technologies, Inc.

BNAMS

WATER - 625

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
98395	11/20/1998	11/20/1998	11-24-98	OF	12.3.98	LL	86)
98396	11/20/1998	11/20/1998					
98397	11/20/1998	11/20/1998					
98398	11/20/1998	11/20/1998					
98399	11/20/1998	11/20/1998			12.4.5.98		
98400	11/20/1998	11/20/1998			12.3.58		
98401	11/20/1998	11/20/1998	↓		↓	↓	↓

**INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
ENVIROTECH RESEARCH, INC.**

777 NEW DURHAM ROAD, EDISON, NJ
08817
(732) 549-3900

Job No: J322

Site: L.E. Carpenter

Client: Residuals Management Technologies, Inc.

VOAGC

602

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
WATER							
98395	11/20/1998	11/20/1998			11/21/98	Kb	6588
98396	11/20/1998	11/20/1998					
98397	11/20/1998	11/20/1998					
98398	11/20/1998	11/20/1998					
98399	11/20/1998	11/20/1998					
98400	11/20/1998	11/20/1998					
98401	11/20/1998	11/20/1998					
98402	11/20/1998	11/20/1998			↓	↓	↓

Analytical Methodology Summary

Volatile Organics:

Unless otherwise specified, water samples are analyzed for volatile organics by purge and trap GC/MS as specified in EPA Method 624. Drinking water samples are analyzed by EPA Method 524.2. Solid samples are analyzed for volatile organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8260B. Water samples are analyzed for volatile organics by purge and trap GC/PID and GC/ELCD as specified in EPA Methods 601 and 602. Solid samples are analyzed by GC/PID and GC/ELCD in accordance with SW-846, 3rd Edition Method 8021B.

Acid and Base/Neutral Extractable Organics:

Unless otherwise specified, water samples are analyzed for acid and/or base/neutral extractable organics by GC/MS in accordance with EPA Method 625. Solids are analyzed for acid and/or base/neutral extractable organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8270C.

GC/MS Nontarget Compound Analysis:

Analysis for nontarget compounds is conducted, upon request, in conjunction with GC/MS analyses by EPA Methods 624, 625, 8260B and 8270C. Nontarget compound analysis is conducted using a forward library search of the EPA/NIH/NBS mass spectral library of compounds at the greatest apparent concentration (10% or greater of the nearest internal standard) in each organic fraction (15 for volatile, 15 for base/ neutrals and 10 for acid extractables).

Organochlorine Pesticides and PCBs:

Unless otherwise specified, water samples are analyzed for organochlorine pesticides and PCBs by dual column gas chromatography with electron capture detectors as specified in EPA Method 608. Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8081A for organochlorine pesticides and Method 8082 for PCBs.

Total Petroleum Hydrocarbons:

Water samples are analyzed for petroleum hydrocarbons by I.R. using EPA Method 418.1. Solid samples are prepared for analysis by soxhlet extraction consistent with the March 1990 N.J. DEP "Remedial Investigation Guide" Appendix A, page 52, and analyzed by U.S. EPA Method 418.1

Metals Analysis:

Metals analyses are performed by any of four techniques specified by a Method Code provided on each data report page, as follows:

P - Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)

A - Flame Atomic Absorption

F - Furnace Atomic Absorption

CV - Manual Cold Vapor (Mercury)

Water samples are digested and analyzed using EPA methods provided in "Methods for Chemical Analysis of Water and Wastewater" (EPA 600/4-79-020). Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition); samples are digested according to Method 3050B "Acid Digestion of Soil, Sediments and Sludges."

Specific method references for ICP analyses are water Method 200.7 and solid Method 6010B. Mercury analyses are conducted by the manual cold vapor technique specified by water Method 245.1 and solid Method 7471A. Other specific Atomic Absorption method references are as follows:

<u>Element</u>	Water Test Method		Solid Test Method	
	<u>Flame</u>	<u>Furnace</u>	<u>Flame</u>	<u>Furnace</u>
Aluminum	202.1	202.2	7020	--
Antimony	204.1	204.2	7040	7041
Arsenic	--	206.2	--	7060
Barium	208.1	--	7080	--
Beryllium	210.1	210.2	7090	7091
Cadmium	213.1	213.2	7130	7131
Calcium	215.1	--	7140	--
Chromium, Total	218.1	218.2	7190	7191
Chromium, (+6)	218.4	218.5	7197	7195
Cobalt	219.1	219.2	7200	7201
Copper	220.1	220.2	7210	--
Iron	236.1	236.2	7380	--
Lead	239.1	239.2	7420	7421
Magnesium	242.1	--	7450	--
Manganese	243.1	243.2	7460	--
Nickel	249.1	249.2	7520	--
Potassium	258.1	--	7610	--
Selenium	--	270.2	--	7740
Silver	272.1	272.2	7760	--
Sodium	273.1	--	7770	--
Tin	283.1	283.2	7870	--
Thallium	279.1	279.2	7840	7841
Vanadium	286.1	286.2	7910	7911
Zinc	289.1	289.2	7950	--

Cyanide:

Water samples are analyzed for cyanide using EPA Method 335.3. Cyanide is determined in solid samples as specified in the EPA Contract Laboratory Program IFB dated July 1988, revised February 1989.

Phenols:

Water samples are analyzed for total phenols using EPA Method 420.2. Total phenols are determined in solid samples by preparing the sample as outlined in the EPA Contract Laboratory Program IFB for cyanide, followed by a phenols determination using EPA Method 420.1.

Cleanup of Semivolatile Extracts:

Upon request Method 3611B Alumina Column Cleanup and/or Method 3650B Acid-Base Partition Cleanup are performed to improve detection limits by the removal of saturated hydrocarbon interferences.

Hazardous Waste Characteristics:

Samples for hazardous waste characteristics are analyzed as specified in the U.S. EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition). Specific method references are as follows:

Ignitability - Method 1020A

Corrosivity - Water pH Method 9040B
Soil pH Method 9045C

Reactivity - Chapter 7, Section 7.3.3 and 7.3.4
respectively for hydrogen cyanide and
hydrogen sulfide release

Toxicity - TCLP Method 1311

Miscellaneous Parameters:

Additional analyses performed on both aqueous and solid samples are in accordance with methods published in the following references:

- Test Methods for Evaluating Solid Wastes, SW-846 3rd Edition, November 1986.
- Standard Methods for the Examination of Water and Wastewater, 17th Edition.
- Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1979.

DATA REPORTING QUALIFIERS

ND - The compound was not detected at the indicated concentration.

J - Mass spectral data indicates the presence of a compound that meets the identification criteria. The result is less than the specified detection limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NON-CONFORMANCE SUMMARY

Envirotech Research, Inc. Job Number: J322

Volatile Organics Analysis:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Base/Neutral and/or Acid Extractable Organics:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

PCBs and/or Organochlorine Pesticides:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Page 1 of 2

Non-conformance Summary, Page 2 of 2
Envirotech Research, Inc. Job Number: 3322

Metals Analysis:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Total Petroleum Hydrocarbons:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

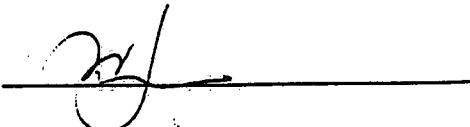
See continuation page if checked ()

General Chemistry/Disposal Parameters:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Signature of
Laboratory Manager:



Date: 12/18/98

Client ID: MW-15I
Site: L.E. Carpenter

Lab Sample No: 98395
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9278.d

Matrix: WATER
Level: LOW
Sample Volume: 940 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter Analytical Result
 Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate	11	1.1
----------------------------	----	-----

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9278.d
Report Date: 03-Dec-1998 14:48

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9278.d
Lab Smp Id: 98395 Client Smp ID: MW-15I
Inj Date : 03-DEC-1998 13:17 ~~xx~~
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98395;940;2;1;;
Misc Info : J322;PPBN(SEE NOTE);4261;143

Comment :

Method : /chem/BNAMS2.i/625/11-30-98/03nov98.b/Bna625A.m

Meth Date : 03-Dec-1998 10:16 B Quant Type: ISTD

Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d

Als bottle: 6

Dil Factor: 1.00000

Integrator: HP RTE

Compound Sublist: BIS2PHTHb.sub

Target Version: 3.40

Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	940.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.740	12.740 (1.000)	244750	40.0000			
\$ 76 Nitrobenzene-d5 (SUR)	82	13.703	13.708 (0.918)	821856	46.2728	98		
* 80 Naphthalene-d8	136	14.922	14.920 (1.000)	951501	40.0000			
\$ 77 2-Fluorobiphenyl (SUR)	172	16.718	16.717 (0.937)	1053152	45.1399	96		
* 82 Acenaphthene-d10	164	17.839	17.844 (1.000)	637563	40.0000			
* 83 Phenanthrene-d10	188	20.296	20.299 (1.000)	1187052	40.0000			
\$ 78 Terphenyl-d14 (SUR)	244	22.917	22.917 (0.929)	1820642	54.1272	120		
63 bis(2-Ethylhexyl)phthalate	149	24.628	24.633 (0.998)	178657	5.00175	11		
* 81 Chrysene-d12	240	24.668	24.681 (1.000)	1216330	40.0000			
* 84 Perylene-d12	264	27.914	27.925 (1.000)	1126787	40.0000			

Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9278.d

Date : 03-DEC-1998 13:17

Client ID: MW-15I

Sample Info: 98395;940;2;1;;

Purge Volume: 940.0

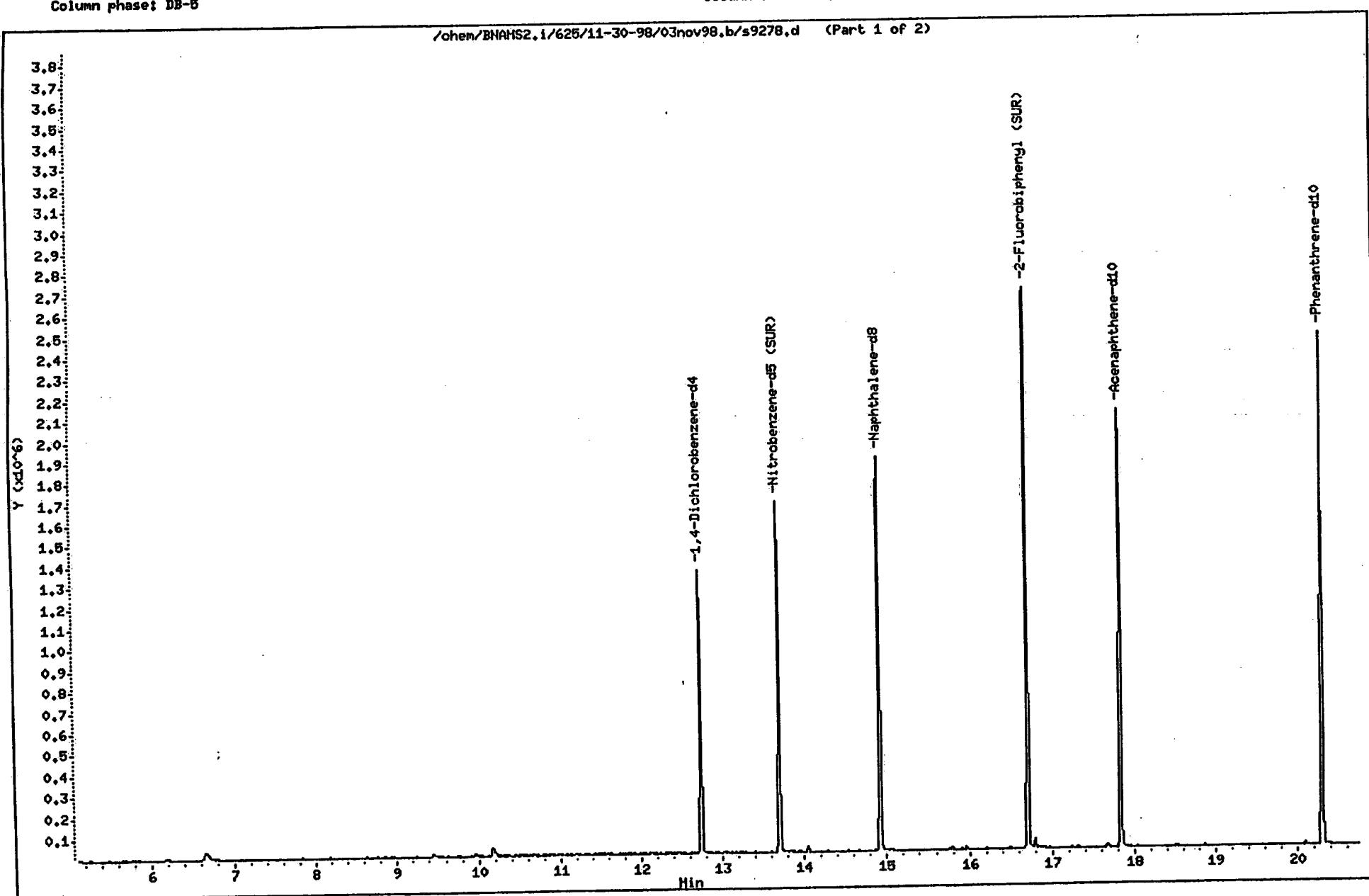
Column phase: DB-5

Instrument: BNAHS2.1

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.1/625/11-30-98/03nov98.b/s9278.d (Part 1 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9278.d

Date : 03-DEC-1998 13:17

Client ID: MW-151

Sample Info: 98395;940;2;1}}

Purge Volume: 940.0

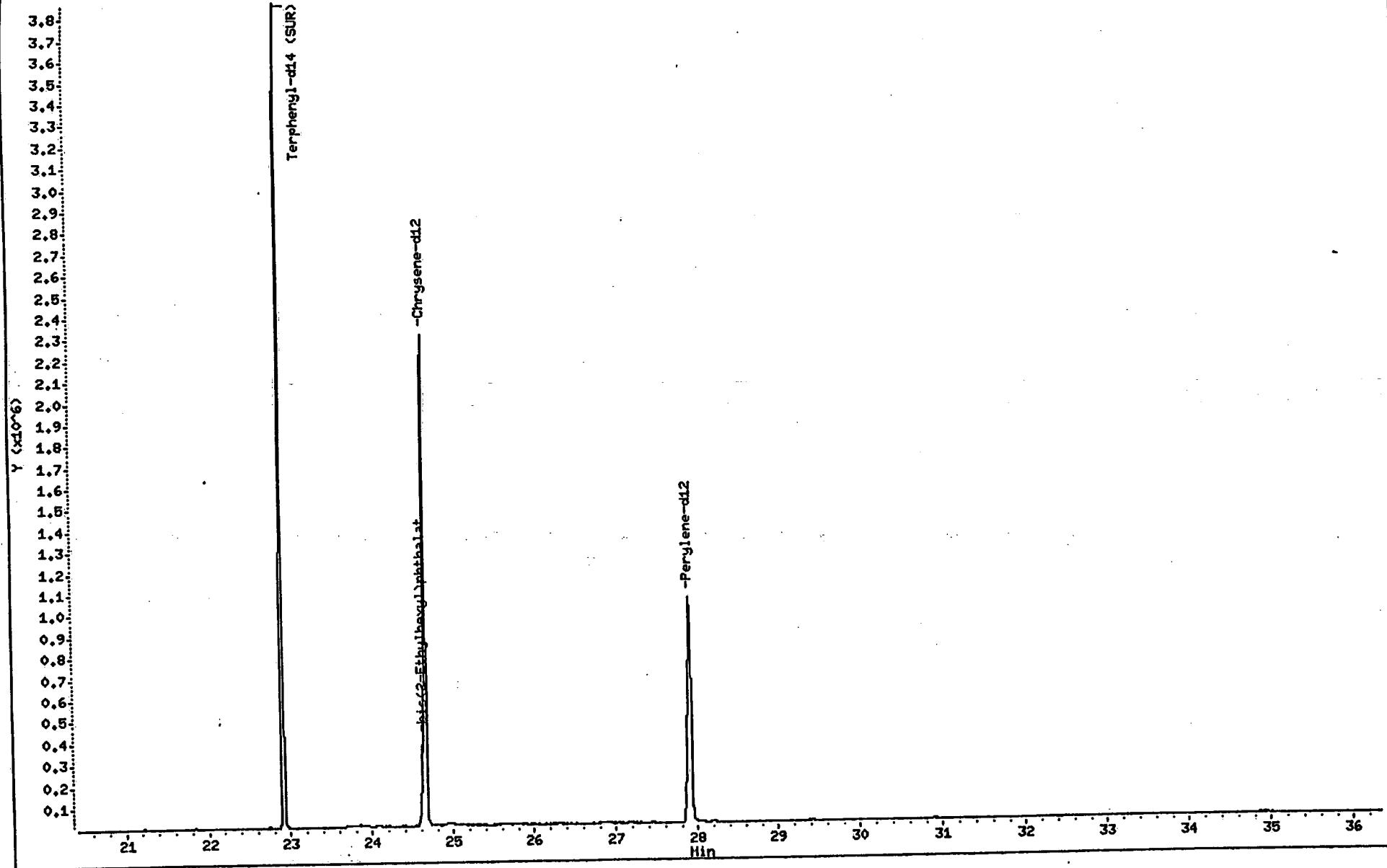
Column phase: DB-5

Instrument: BNAHS2.1

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.1/625/11-30-98/03nov98.b/s9278.d (Part 2 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9278.d

Date : 03-DEC-1998 13:17

Client ID: MW-15I

Sample Info: 98395;940;2;1;;

Purge Volume: 940.0

Column phase: DB-5

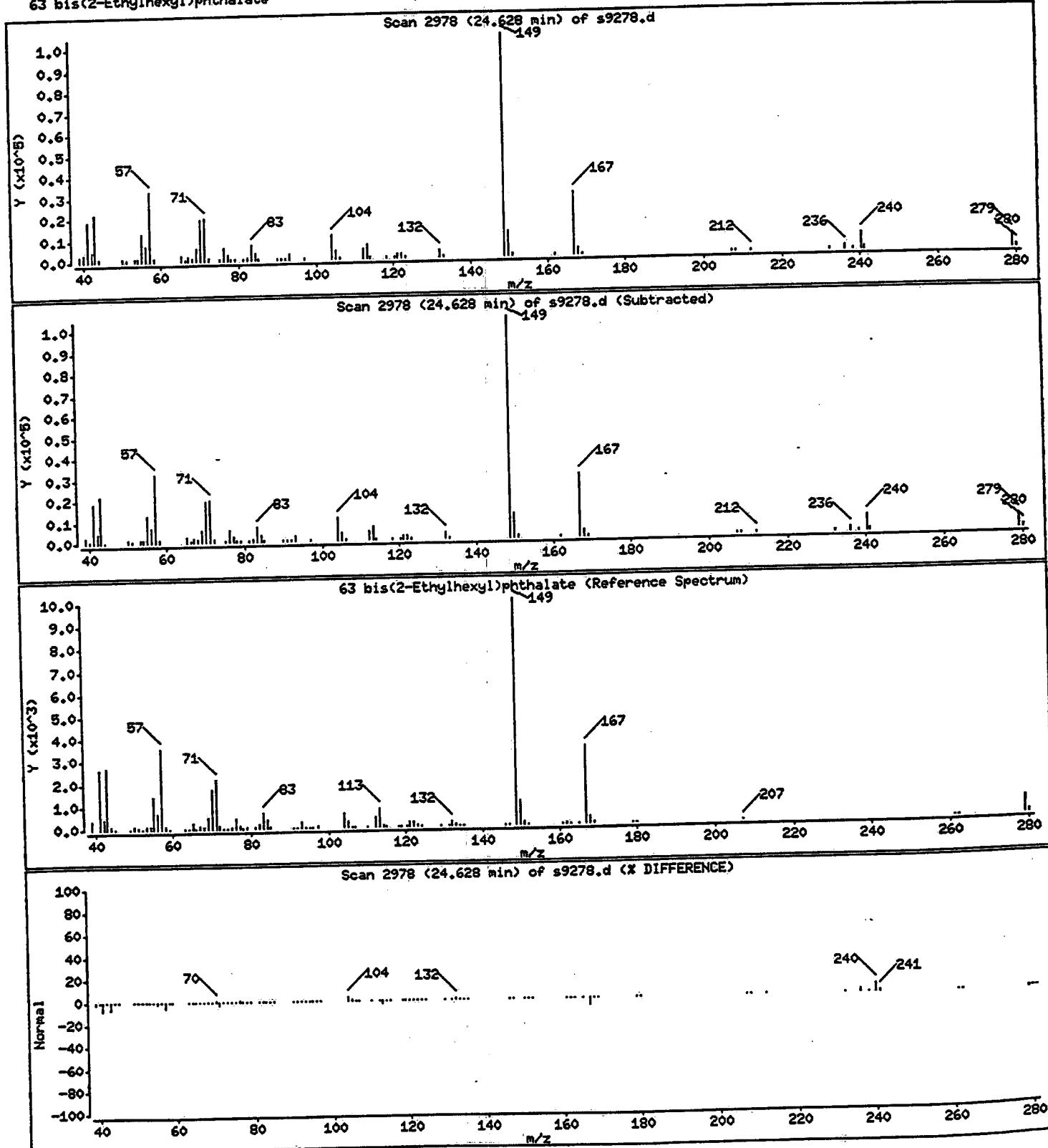
Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

Concentration: 11 ug/L

63 bis(2-Ethylhexyl)phthalate



Client ID: MW-22R
Site: L.E. Carpenter

Lab Sample No: 98396
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9282.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 10.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

bis(2-Ethylhexyl)phthalate

Analytical Result
Units: ug/l

1100

Method Detection
Limit
Units: ug/l

12

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9282.d
Report Date: 03-Dec-1998 16:53

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9282.d
Lab Smp Id: 98396 Client Smp ID: MW-22R
Inj Date : 03-DEC-1998 16:13 ~~✓~~
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98396;920;2;10;;
Misc Info : J322;PPBN(SEE NOTE);4261;143
Comment :
Method : /chem/BNAMS2.i/625/11-30-98/03nov98.b/Bna625A.m
Meth Date : 03-Dec-1998 10:16 B Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 10
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: BIS2PHTHb.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	10.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	920.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.744	12.740 (1.000)		237250	40.0000		
\$ 76 Nitrobenzene-d5 (SUR)	82	13.695	13.708 (0.918)		84760	4.96082	110	
* 80 Naphthalene-d8	136	14.921	14.920 (1.000)		915328	40.0000		
\$ 77 2-Fluorobiphenyl (SUR)	172	16.710	16.717 (0.936)		104471	4.66441	100(a)	
* 82 Acenaphthene-d10	164	17.843	17.844 (1.000)		612057	40.0000		
* 83 Phenanthrene-d10	188	20.300	20.299 (1.000)		1132100	40.0000		
\$ 78 Terphenyl-d14 (SUR)	244	22.908	22.917 (0.929)		168827	5.39987	120	
63 bis(2-Ethylhexyl)phthalate	149	24.632	24.633 (0.999)		1655666	49.8683	1100	
* 81 Chrysene-d12	240	24.665	24.681 (1.000)		1130579	40.0000		
* 84 Perylene-d12	264	27.920	27.925 (1.000)		1070567	40.0000		

QC Flag Legend

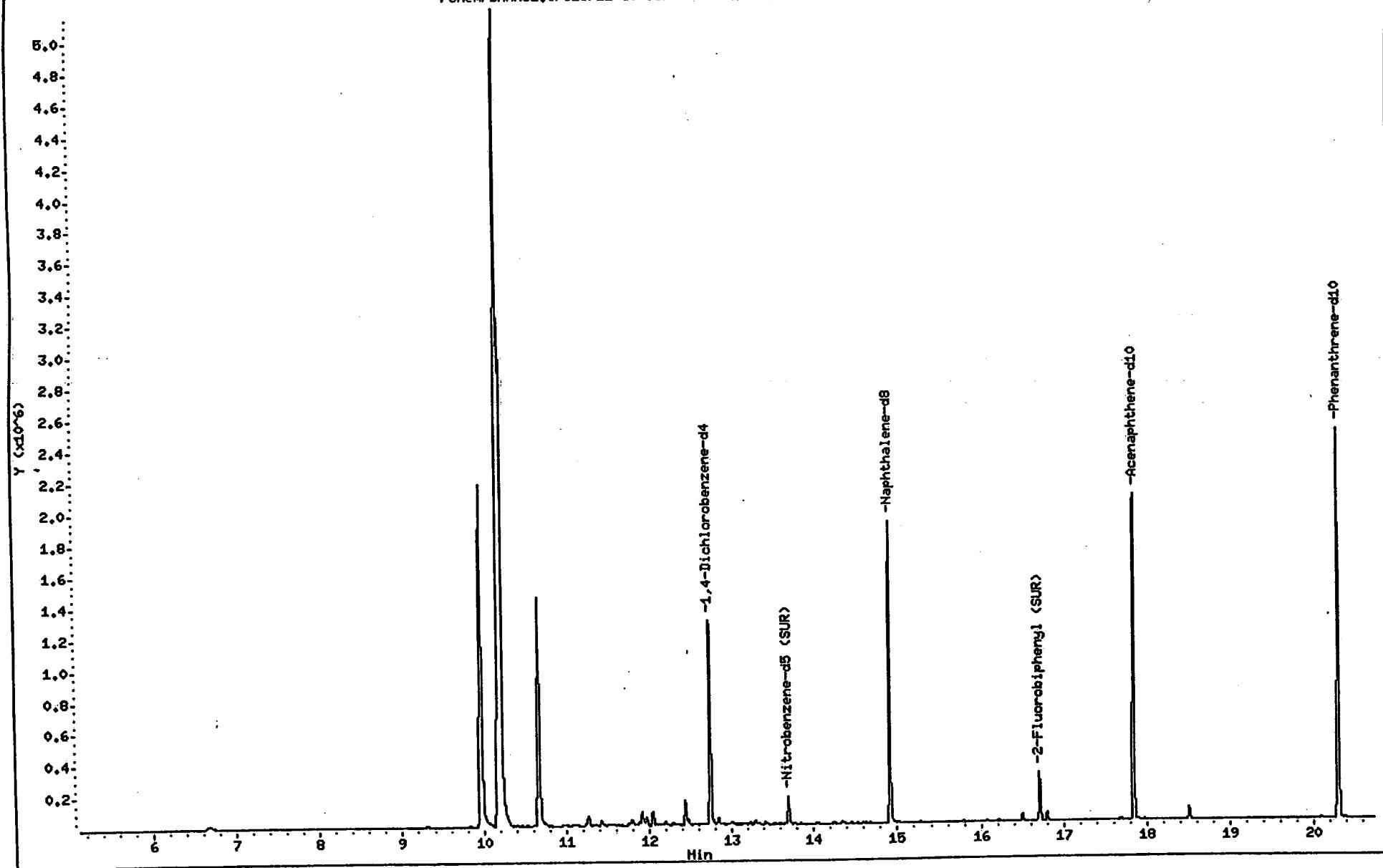
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9282.d
Date : 03-DEC-1998 16:13
Client ID: MW-22R
Sample Info: 98396;920;2;10;;
Purge Volume: 920.0
Column phase: DB-5

Instrument: BNAHS2.i
Operator: BNAHS 1
Column diameter: 0.53

35

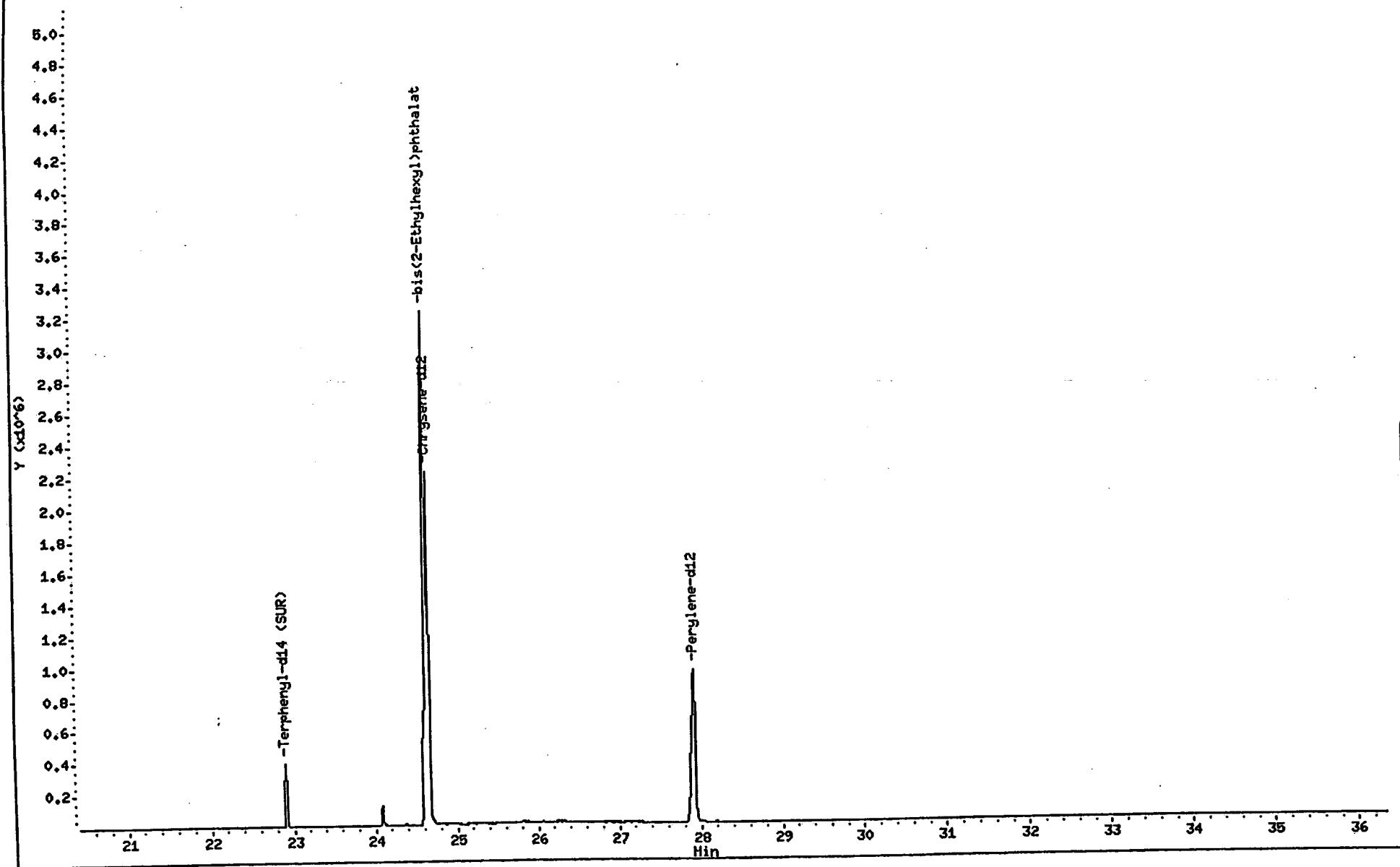
/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9282.d (Part 1 of 2)



Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9282.d
Date : 03-DEC-1998 16:13
Client ID: MW-22R
Sample Info: 98396;920;2;10;
Purge Volume: 920.0
Column phase: DB-5

Instrument: BNAHS2.i
Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9282.d (Part 2 of 2)



Data File: /chem/BNAMS2.1/625/11-30-98/03nov98.b/s9282.d

Date : 03-DEC-1998 16:13

Client ID: MW-22R

Instrument: BNAMS2.i

Sample Info: 98396;920;2;10;;

Operator: BNAMS 1

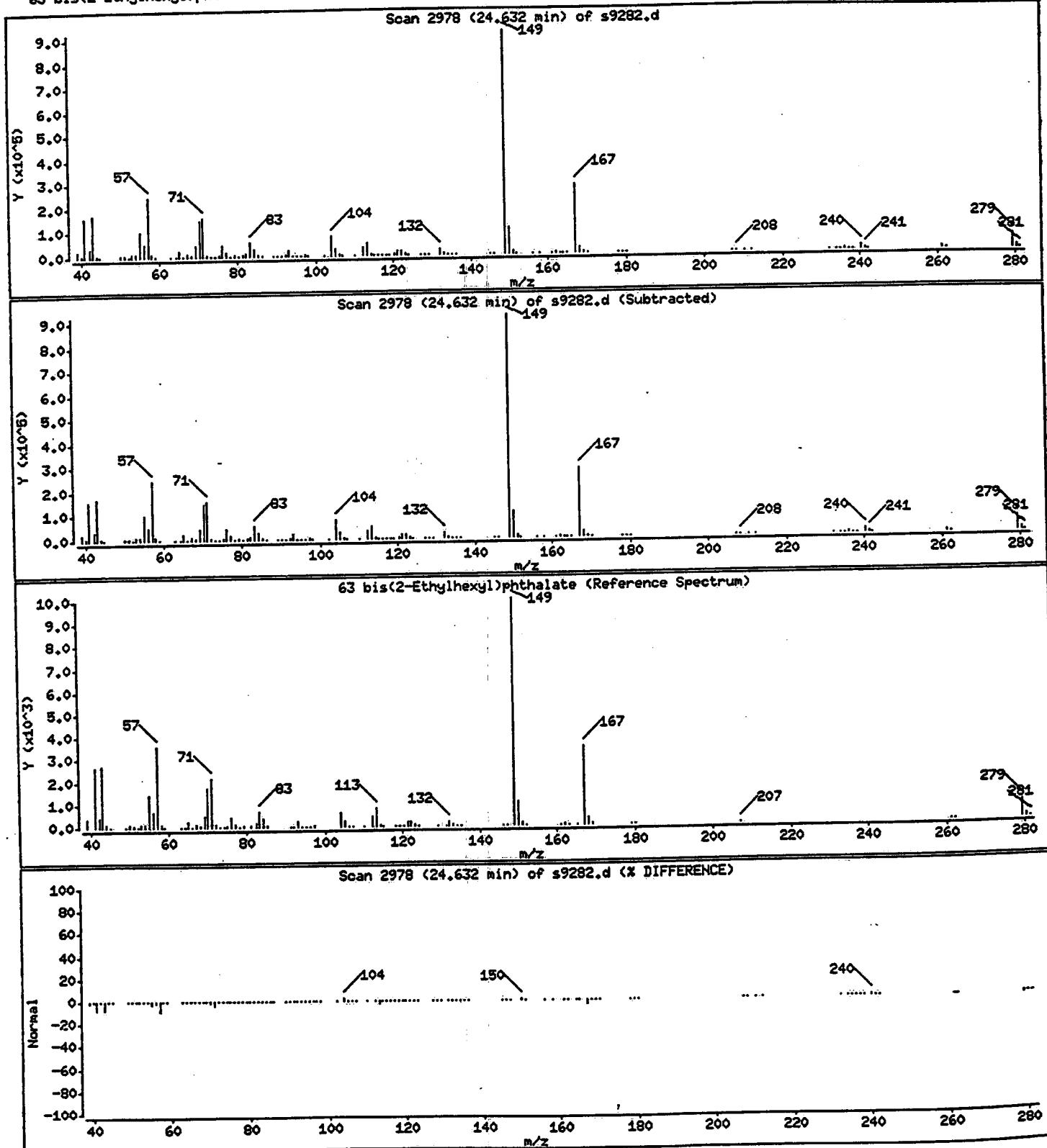
Purge Volume: 920.0

Column diameter: 0.53

Column phase: DB-5

Concentration: 1100 ug/L

63 bis(2-Ethylhexyl)phthalate



Client ID: MW-25R
Site: L.E. Carpenter

Lab Sample No: 98397
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9269.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

Parameter

bis(2-Ethylhexyl)phthalate 1.9 1.2

Data File: /chem/BNAMS2.i/625/11-30-98/02dec98.b/s9269.d
Report Date: 03-Dec-1998 09:09

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/02dec98.b/s9269.d
Lab Smp Id: 98397 Client Smp ID: MW-25R
Inj Date : 03-DEC-1998 06:32 ~~xx~~
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98397;920;2;1;;
Misc Info : J322;PPBN(SEE NOTE);4261;143
Comment :
Method : /chem/BNAMS2.i/625/11-30-98/02dec98.b/Bna625A.m
Meth Date : 02-Dec-1998 12:15 lisa Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 30
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTHb.sub
Target Version: 3.40
Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	920.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RT	CONCENTRATIONS	
							RESPONSE	ON-COLUMN (ug/ml) FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4		152	12.727	12.714	(1.000)	268419	40.0000	
\$ 76 Nitrobenzene-d5 (SUR)		82	13.690	13.688	(0.919)	836851	44.1639	96
* 80 Naphthalene-d8		136	14.903	14.900	(1.000)	1015126	40.0000	
\$ 77 2-Fluorobiphenyl (SUR)		172	16.698	16.696	(0.937)	1088715	44.3997	96
* 82 Acenaphthene-d10		164	17.826	17.823	(1.000)	670080	40.0000	
* 83 Phenanthrene-d10		188	20.283	20.277	(1.000)	1265763	40.0000	
\$ 78 Terphenyl-d14 (SUR)		244	22.904	22.896	(0.929)	1990283	53.2026	120
63 bis(2-Ethylhexyl)phthalate		149	24.608	24.613	(0.998)	35456	0.89252	1.9
* 81 Chrysene-d12		240	24.648	24.660	(1.000)	1352771	40.0000	
* 84 Perylene-d12		264	27.886	27.886	(1.000)	1218441	40.0000	

Data File: /chem/BNAHS2.i/625/11-30-98/02dec98.b/s9269.d

Date : 03-DEC-1998 06:32

Client ID: MW-25R

Sample Info: 98397;920;2;1;;

Purge Volume: 920.0

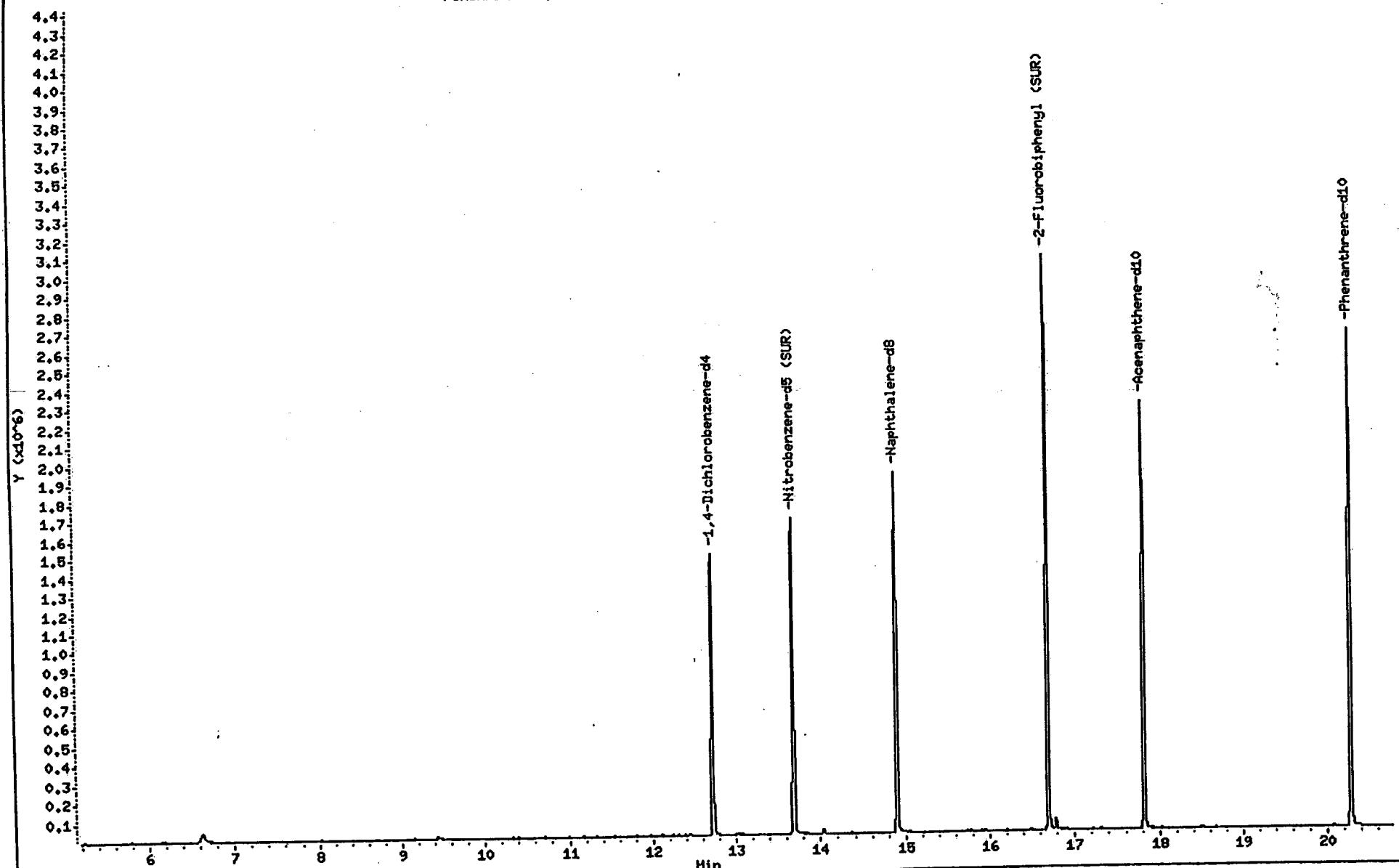
Column phase: DB-5

Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/02dec98.b/s9269.d (Part 1 of 2)



Data File: /chem/BNAHS2.i/625/11-30-98/02dec98.b/s9269.d

Date : 03-DEC-1998 06:32

Client ID: HM-25R

Sample Info: 98397;920;2;1;;

Purge Volume: 920.0

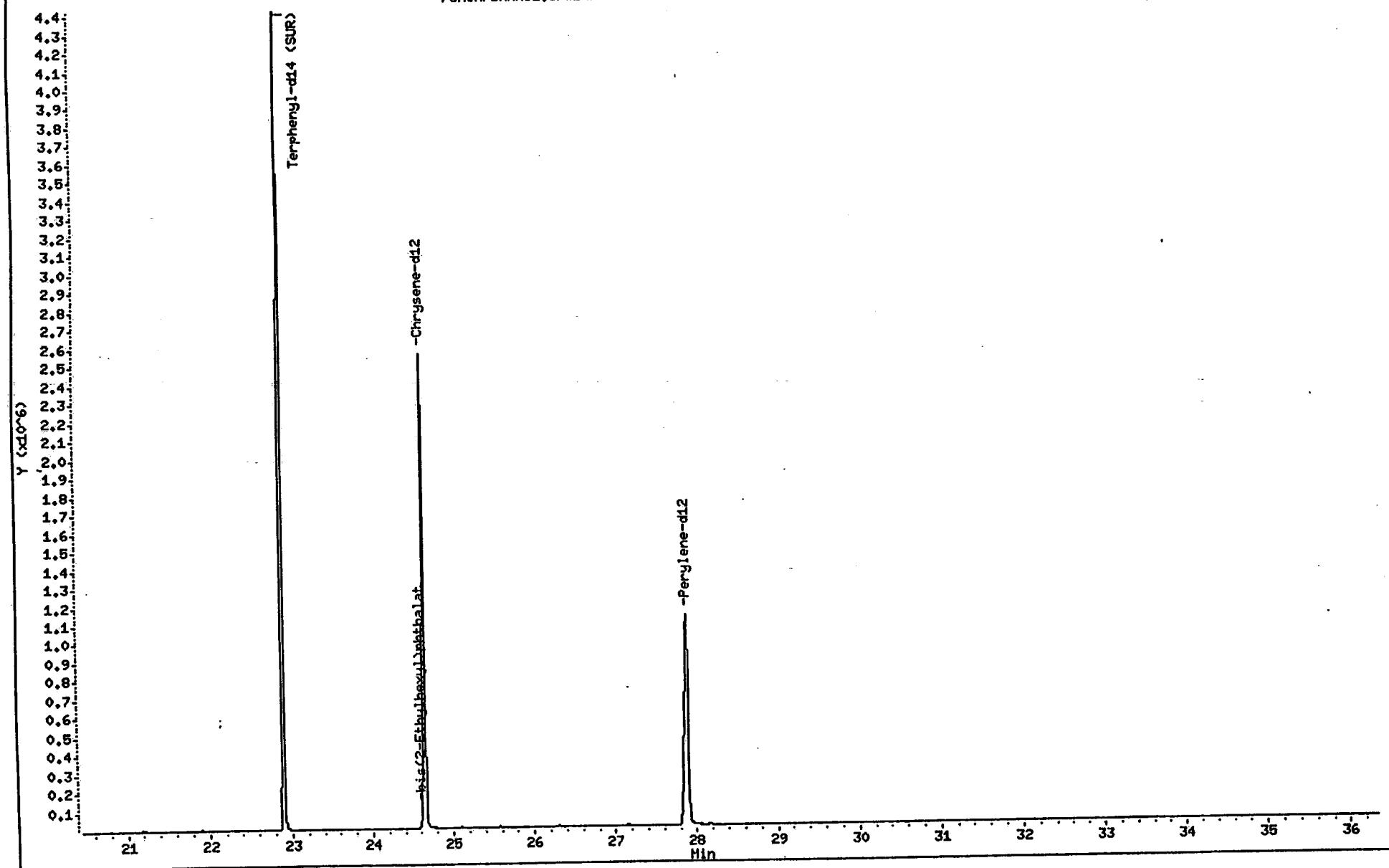
Column phase: DB-5

Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/02dec98.b/s9269.d (Part 2 of 2)



Data File: /chem/BNAMS2.i/625/11-30-98/02dec98.b/s9269.d

Date : 03-DEC-1998 06:32

Client ID: MN-25R

Instrument: BNAMS2.i

Sample Info: 98397;920;2;1;;

Operator: BNAMS 1

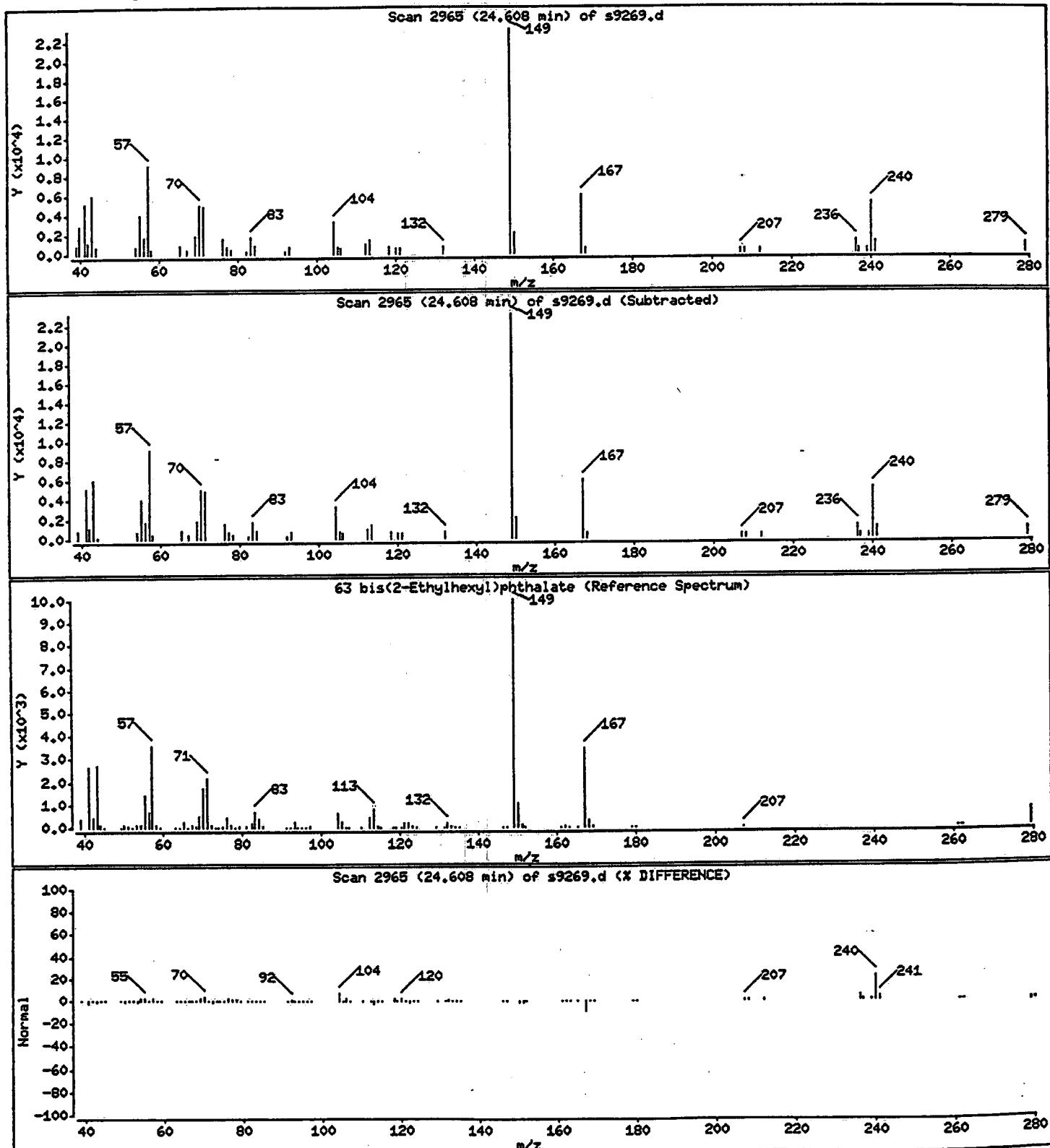
Purge Volume: 920.0

Column diameter: 0.53

Column phase: DB-5

Concentration: 1.9 ug/L

63 bis(2-Ethylhexyl)phthalate



Client ID: MW-14J
Site: L.E. Carpenter

Lab Sample No: 98398
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9270.d

Matrix: WATER
Level: LOW
Sample Volume: 920 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

bis(2-Ethylhexyl)phthalate

Analytical Result
Units: ug/l

ND

Method Detection
Limit
Units: ug/l

1.2

Data File: /chem/BNAMS2.i/625/11-30-98/02dec98.b/s9270.d
Report Date: 03-Dec-1998 09:09

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/02dec98.b/s9270.d
Lab Smp Id: 98398 Client Smp ID: MW-14J
Inj Date : 03-DEC-1998 07:16 ~~xx~~
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98398;920;2;1;;
Misc Info : J322;PPBN(SEE NOTE);4261;143
Comment :
Method : /chem/BNAMS2.i/625/11-30-98/02dec98.b/Bna625A.m
Meth Date : 02-Dec-1998 12:15 lisa Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 31
Dil Factor: 1.00000 Compound Sublist: BIS2PHTHb.sub
Integrator: HP RTE
Target Version: 3.40
Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	920.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.727	12.714 (1.000)	245568	40.0000			
\$ 76 Nitrobenzene-d5 (SUR)	82	13.684	13.688 (0.918)	762042	43.9723		96	
* 80 Naphthalene-d8	136	14.903	14.900 (1.000)	928409	40.0000			
\$ 77 2-Fluorobiphenyl (SUR)	172	16.699	16.696 (0.937)	986869	44.2965		96	
* 82 Acenaphthene-d10	164	17.826	17.823 (1.000)	608811	40.0000			
* 83 Phenanthrene-d10	188	20.283	20.277 (1.000)	1137727	40.0000			
\$ 78 Terphenyl-d14 (SUR)	244	22.904	22.896 (0.929)	1725699	51.8245		110	
* 81 Chrysene-d12	240	24.648	24.660 (1.000)	1204128	40.0000			
* 84 Perylene-d12	264	27.885	27.886 (1.000)	1086097	40.0000			

Data File: /chem/BNAHS2.i/625/11-30-98/02dec98.b/s9270.d

Date : 03-DEC-1998 07:16

Client ID: MW-14J

Sample Info: 98398;920;2;1;;

Purge Volume: 920.0

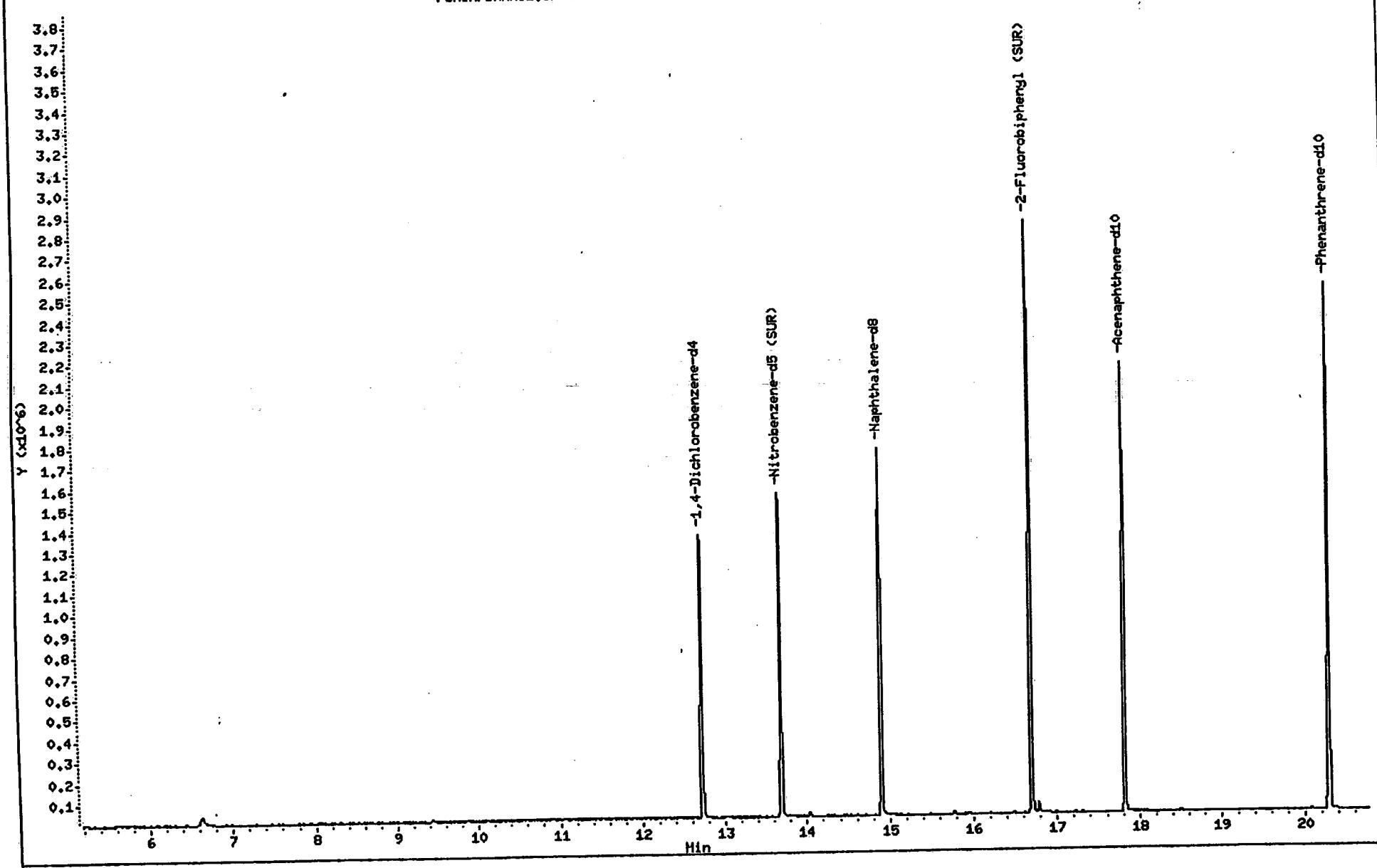
Column phase: DB-5

Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/02dec98.b/s9270.d (Part 1 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/02dec98.b/s9270.d

Date : 03-DEC-1998 07:16

Client ID: HW-14J

Sample Info: 98398;920;2;1;;

Purge Volume: 920.0

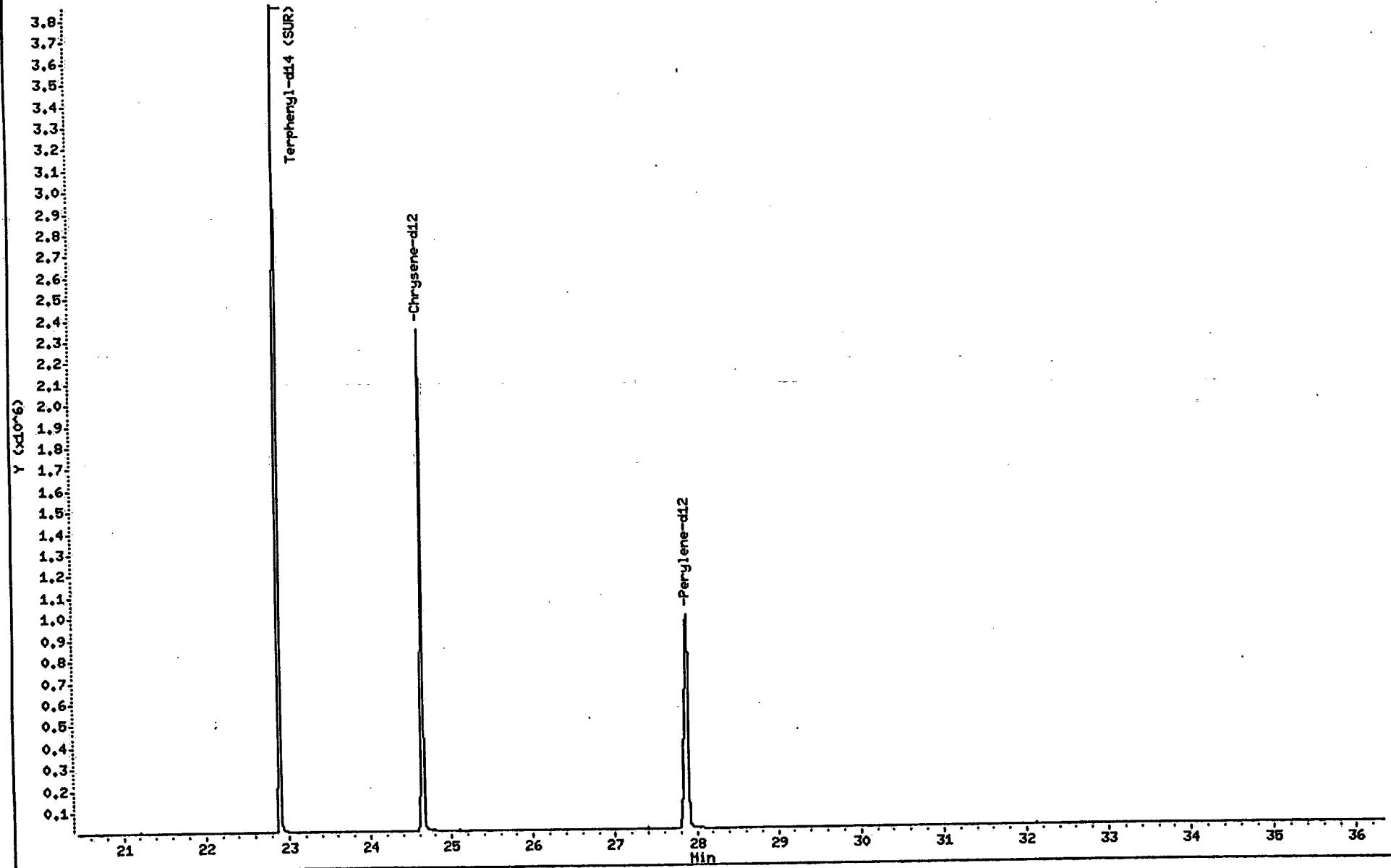
Column phase: DB-5

Instrument: BNAHS2.1

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.1/625/11-30-98/02dec98.b/s9270.d (Part 2 of 2)



Client ID: MW-4
Site: L.E. Carpenter

Lab Sample No: 98399
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/04/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9294.d

Matrix: WATER
Level: LOW
Sample Volume: 990 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 5.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate 650 5.4

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9294.d
Report Date: 04-Dec-1998 08:41

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9294.d
Lab Smp Id: 98399 Client Smp ID: MW-4
Inj Date : 04-DEC-1998 00:59 
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98399;990;2;5;;
Misc Info : J322,PPBN(SEE NOTE);4261;143

Comment :
Method : /chem/BNAMS2.i/625/11-30-98/03nov98.b/Bna625A.m
Meth Date : 03-Dec-1998 10:16 B Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 22
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: BIS2PHTHb.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	5.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	990.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.740	12.740 (1.000)	258310	40.0000			
\$ 76 Nitrobenzene-d5 (SUR)	82	13.697	13.708 (0.918)	159641	8.69366		88	
* 80 Naphthalene-d8	136	14.916	14.920 (1.000)	983742	40.0000			
\$ 77 2-Fluorobiphenyl (SUR)	172	16.705	16.717 (0.936)	205348	8.63292		87	
* 82 Acenaphthene-d10	164	17.839	17.844 (1.000)	650018	40.0000			
* 83 Phenanthrene-d10	188	20.296	20.299 (1.000)	1186777	40.0000			
\$ 78 Terphenyl-d14 (SUR)	244	22.904	22.917 (0.929)	364830	11.2757		110	
63 bis(2-Ethylhexyl)phthalate	149	24.635	24.633 (0.999)	2213314	64.4179		650	
* 81 Chrysene-d12	240	24.662	24.681 (1.000)	1170011	40.0000			
* 84 Perylene-d12	264	27.910	27.925 (1.000)	1109860	40.0000			

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9294.d

Date : 04-DEC-1998 00:59

Client ID: MH-4

Sample Info: 98399;990;2;5;;

Purge Volume: 990.0

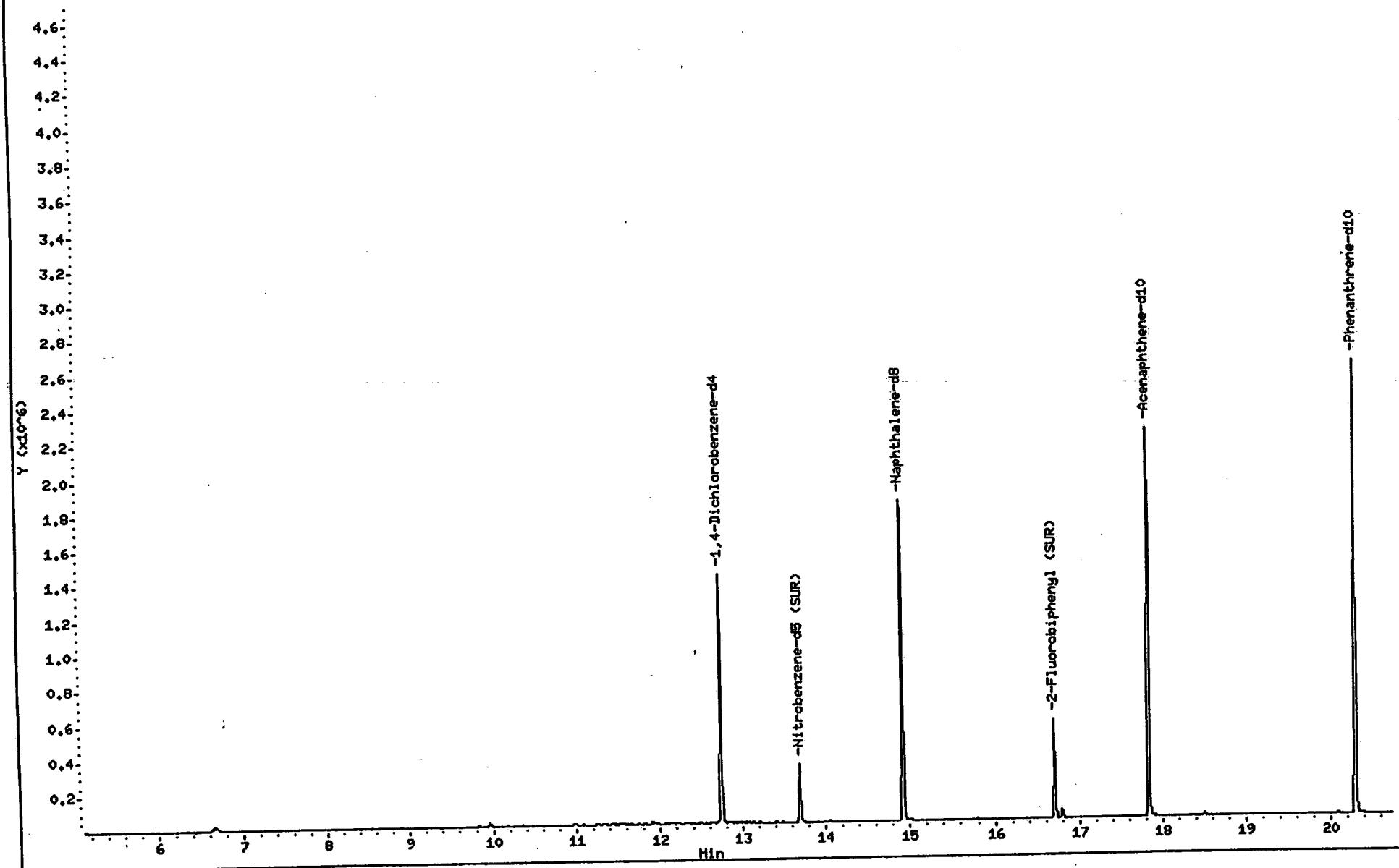
Column phase: DB-5

Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9294.d (Part 1 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9294.d

Date : 04-DEC-1998 00:59

Client ID: MW-4

Sample Info: 98399;990;2;5;;

Purge Volume: 990.0

Column phase: DB-5

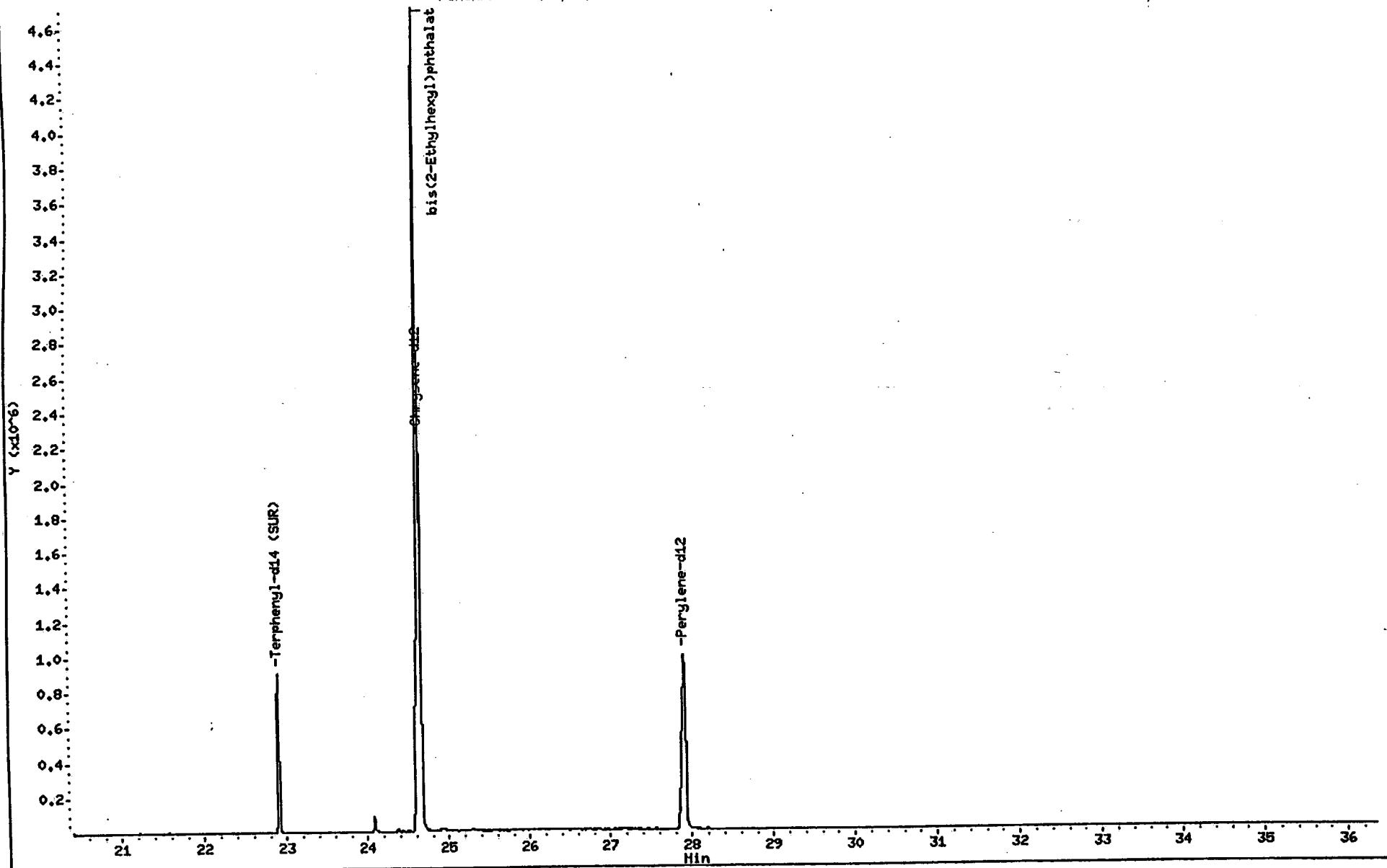
Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

50

/chem/BNAHS2.1/625/11-30-98/03nov98.b/s9294.d (Part 2 of 2)



Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9294.d

Date : 04-DEC-1998 00:59

Client ID: MW-4

Instrument: BNAHS2.i

Sample Info: 98399;990;2:5;;

Purge Volume: 990.0

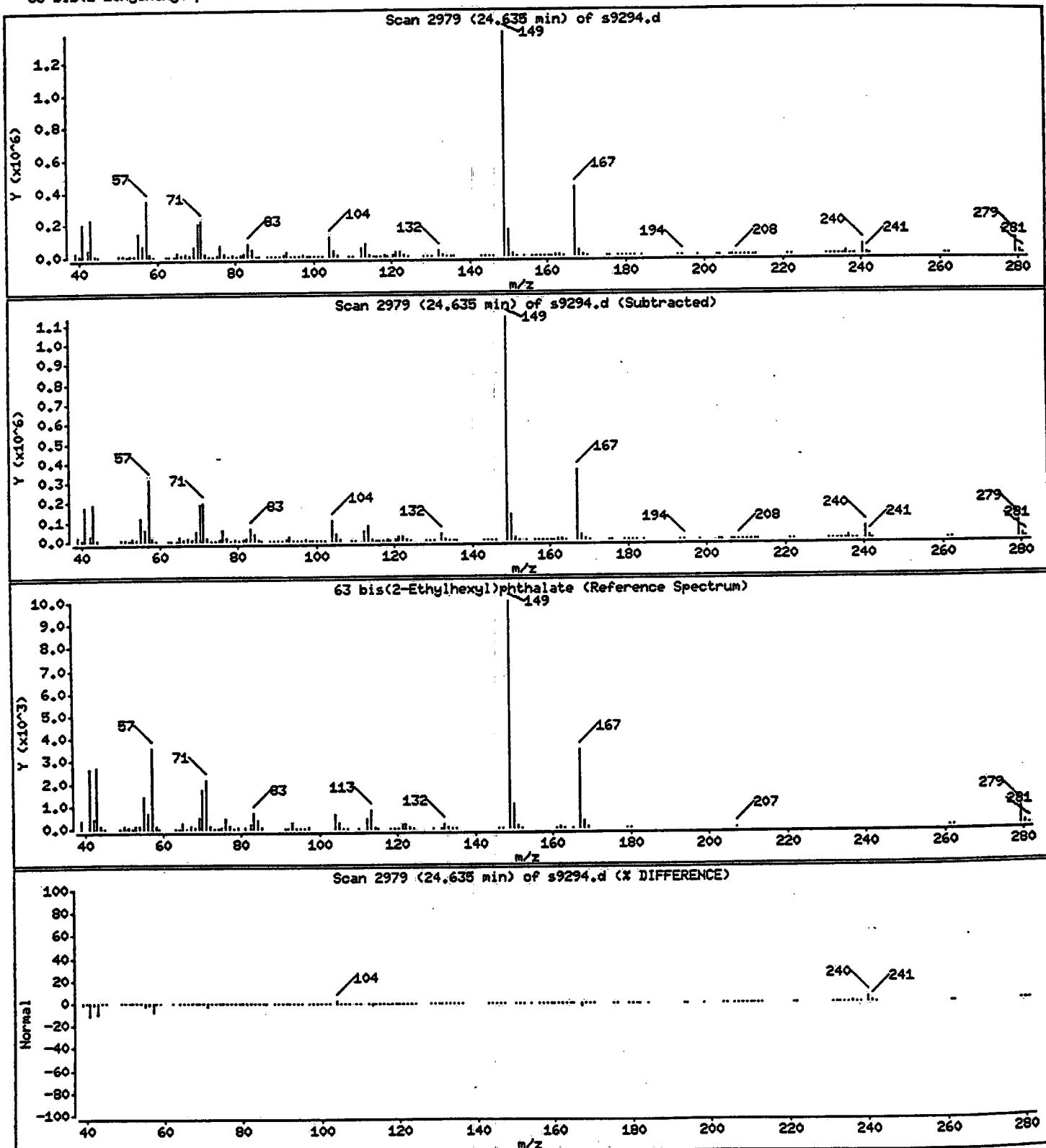
Operator: BNAHS 1

Column phase: DB-5

Column diameter: 0.53

63 bis(2-Ethylhexyl)phthalate

Concentration: 650 ug/L



Client ID: MW-15ID
Site: L.E. Carpenter

Lab Sample No: 98400
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9280.d

Matrix: WATER
Level: LOW
Sample Volume: 950 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate 9.8 1.1

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9280.d
Report Date: 03-Dec-1998 15:22

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9280.d
Lab Smp Id: 98400 Client Smp ID: MW-15ID
Inj Date : 03-DEC-1998 14:44 ~~Q8~~
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98400;950;2;1;;
Misc Info : J322;PPBN(SEE NOTE);4261;143
Comment :
Method : /chem/BNAMS2.i/625/11-30-98/03nov98.b/Bna625A.m
Meth Date : 03-Dec-1998 10:16 B Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTHb.sub
Target Version: 3.40
Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

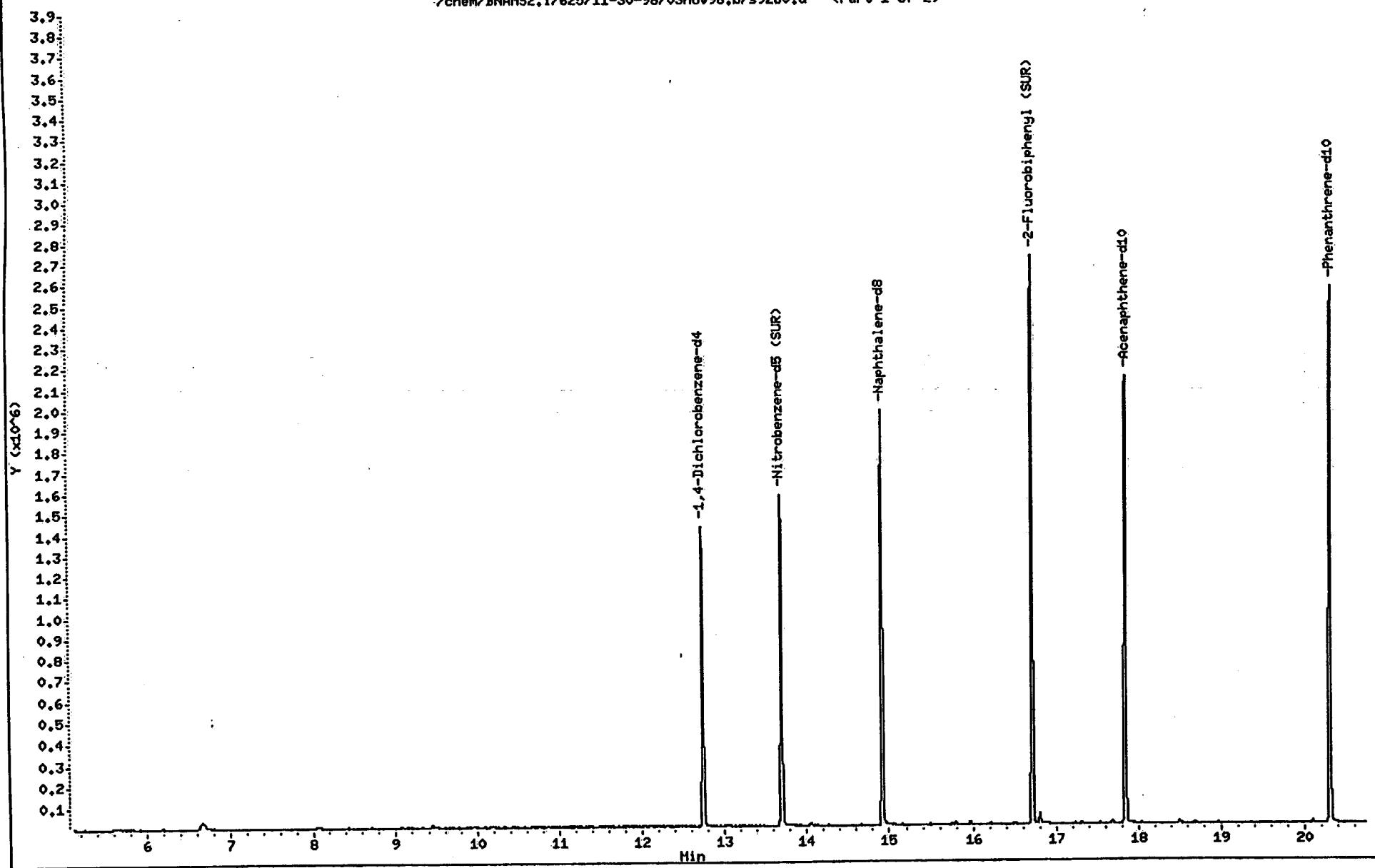
Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	950.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml) FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.739	12.740	(1.000)	251705	40.0000	
\$ 76 Nitrobenzene-d5 (SUR)	82	13.703	13.708	(0.918)	768512	42.1235	89
* 80 Naphthalene-d8	136	14.921	14.920	(1.000)	977384	40.0000	
\$ 77 2-Fluorobiphenyl (SUR)	172	16.717	16.717	(0.937)	988187	41.2318	87
* 82 Acenaphthene-d10	164	17.845	17.844	(1.000)	654937	40.0000	
* 83 Phenanthrene-d10	188	20.302	20.299	(1.000)	1226344	40.0000	
\$ 78 Terphenyl-d14 (SUR)	244	22.916	22.917	(0.929)	1785619	50.8752	110
63 bis(2-Ethylhexyl)phthalate	149	24.627	24.633	(0.998)	174371	4.67845	9.8
* 81 Chrysene-d12	240	24.667	24.681	(1.000)	1269186	40.0000	
* 84 Perylene-d12	264	27.918	27.925	(1.000)	1147549	40.0000	

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9280.d
Date : 03-DEC-1998 14:44
Client ID: MM-15ID
Sample Info: 98400;950;2;1;;
Purge Volume: 950.0
Column phase: DB-5

Instrument: BNAHS2.i
Operator: BNAHS 1
Column diameter: 0.53

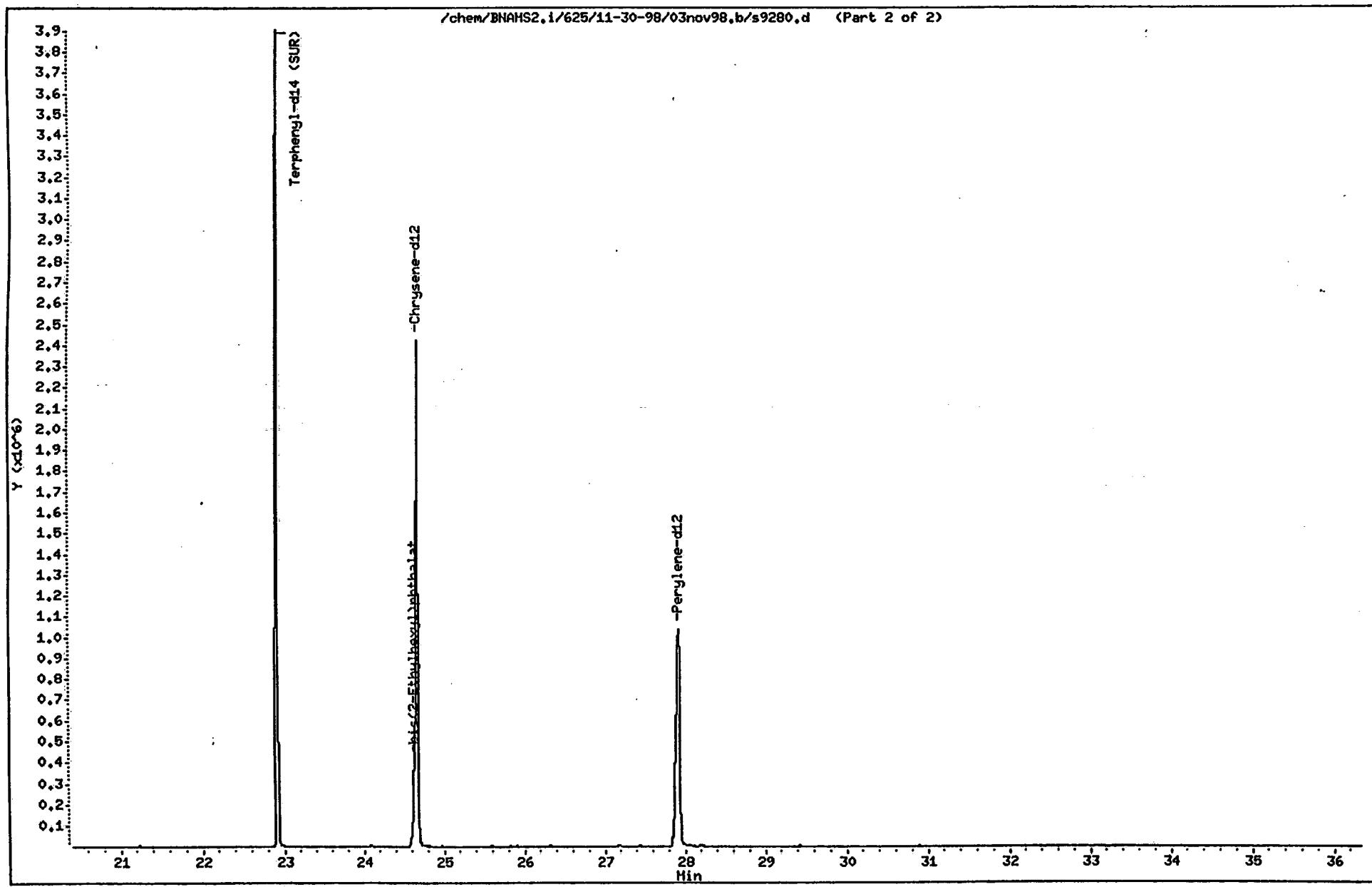
/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9280.d (Part 1 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9280.d
Date : 03-DEC-1998 14:44
Client ID: MW-151D
Sample Info: 98400;950;2;1;;
Purge Volume: 950.0
Column phase: DB-5

Instrument: BNAHS2.1
Operator: BNAHS 1
Column diameter: 0.53

55



Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9280.d

Date : 03-DEC-1998 14:44

Client ID: MW-151D

Instrument: BNAHS2.i

Sample Info: 98400;950;2;1;;

Purge Volume: 950.0

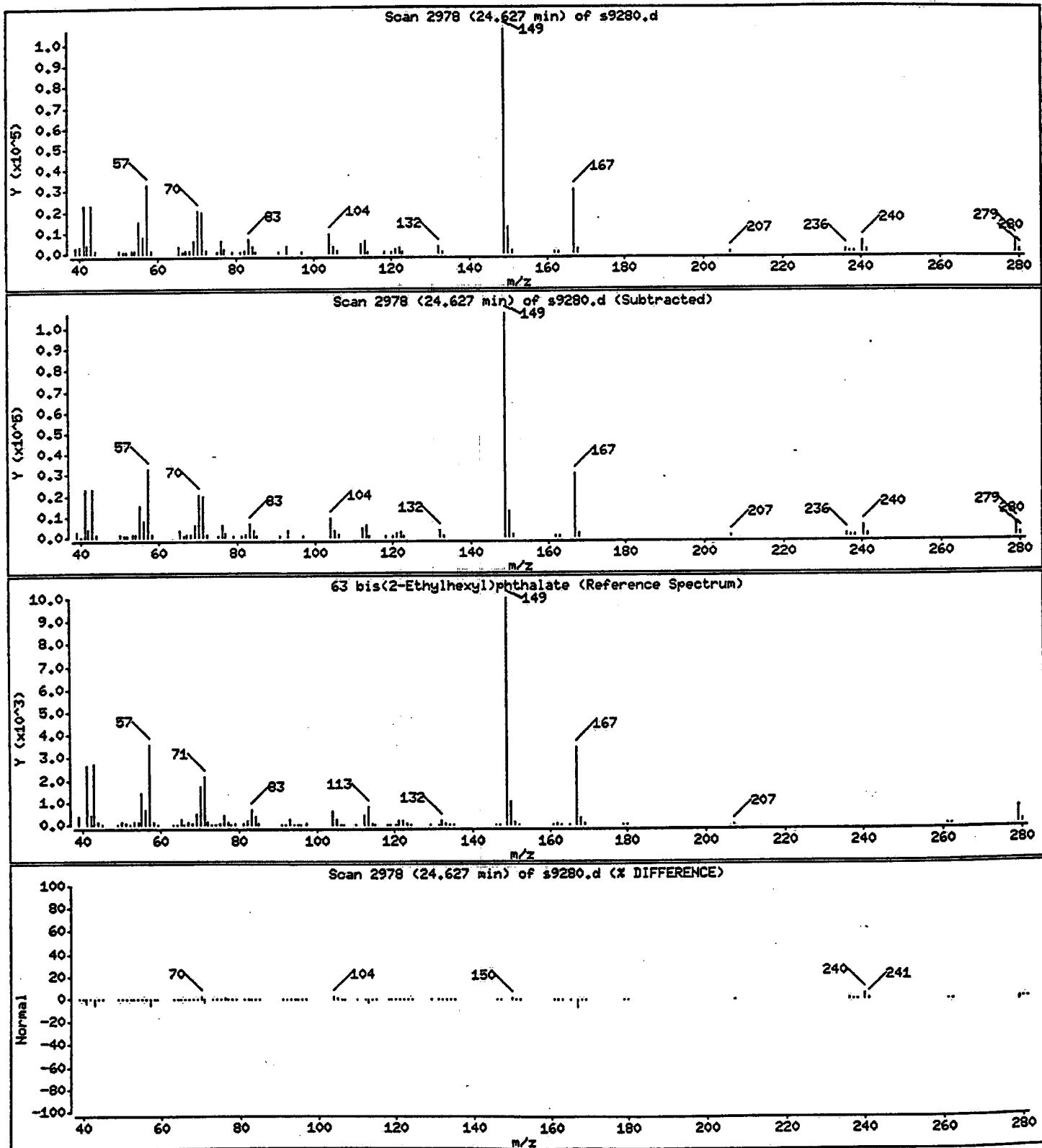
Operator: BNAHS 1

Column phase: DB-5

Column diameter: 0.53

63 bis(2-Ethylhexyl)phthalate

Concentration: 9.8 ug/L



Client ID: Field_Blank
Site: L.E. Carpenter

Lab Sample No: 98401
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Extracted: 11/24/98
Date Analyzed: 12/03/98
GC Column: DB-5
Instrument ID: BNAMS2.i
Lab File ID: s9281.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate 1.3 1.1

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9281.d
Report Date: 03-Dec-1998 16:09

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9281.d
Lab Smp Id: 98401 Client Smp ID: Field_Blank
Inj Date : 03-DEC-1998 15:29
Operator : BNAMS 1 Inst ID: BNAMS2.i
Smp Info : 98401;970;2;1;;
Misc Info : J322;PPBN(SEE NOTE);4261;143
Comment :
Method : /chem/BNAMS2.i/625/11-30-98/03nov98.b/Bna625A.m
Meth Date : 03-Dec-1998 10:16 B Quant Type: ISTD
Cal Date : 30-NOV-1998 15:22 Cal File: s9183.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTHb.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	970.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.739	12.740 (1.000)	274817	40.0000			
\$ 76 Nitrobenzene-d5 (SUR)	82	13.703	13.708 (0.918)	834943	43.4790		90	
* 80 Naphthalene-d8	136	14.922	14.920 (1.000)	1028765	40.0000			
\$ 77 2-Fluorobiphenyl (SUR)	172	16.717	16.717 (0.937)	1169770	46.5405		96	
* 82 Acenaphthene-d10	164	17.838	17.844 (1.000)	686850	40.0000			
* 83 Phenanthrene-d10	188	20.302	20.299 (1.000)	1302051	40.0000			
\$ 78 Terphenyl-d14 (SUR)	244	22.916	22.917 (0.929)	2032361	53.7478		110	
63 bis(2-Ethylhexyl)phthalate	149	24.627	24.633 (0.998)	25131	0.62586		1.3	
* 81 Chrysene-d12	240	24.667	24.681 (1.000)	1367359	40.0000			
* 84 Perylene-d12	264	27.924	27.925 (1.000)	1217426	40.0000			

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9281.d

Date : 03-DEC-1998 15:29

Client ID: Field_Blank

Sample Info: 98401;970;2;1;;

Purge Volume: 970.0

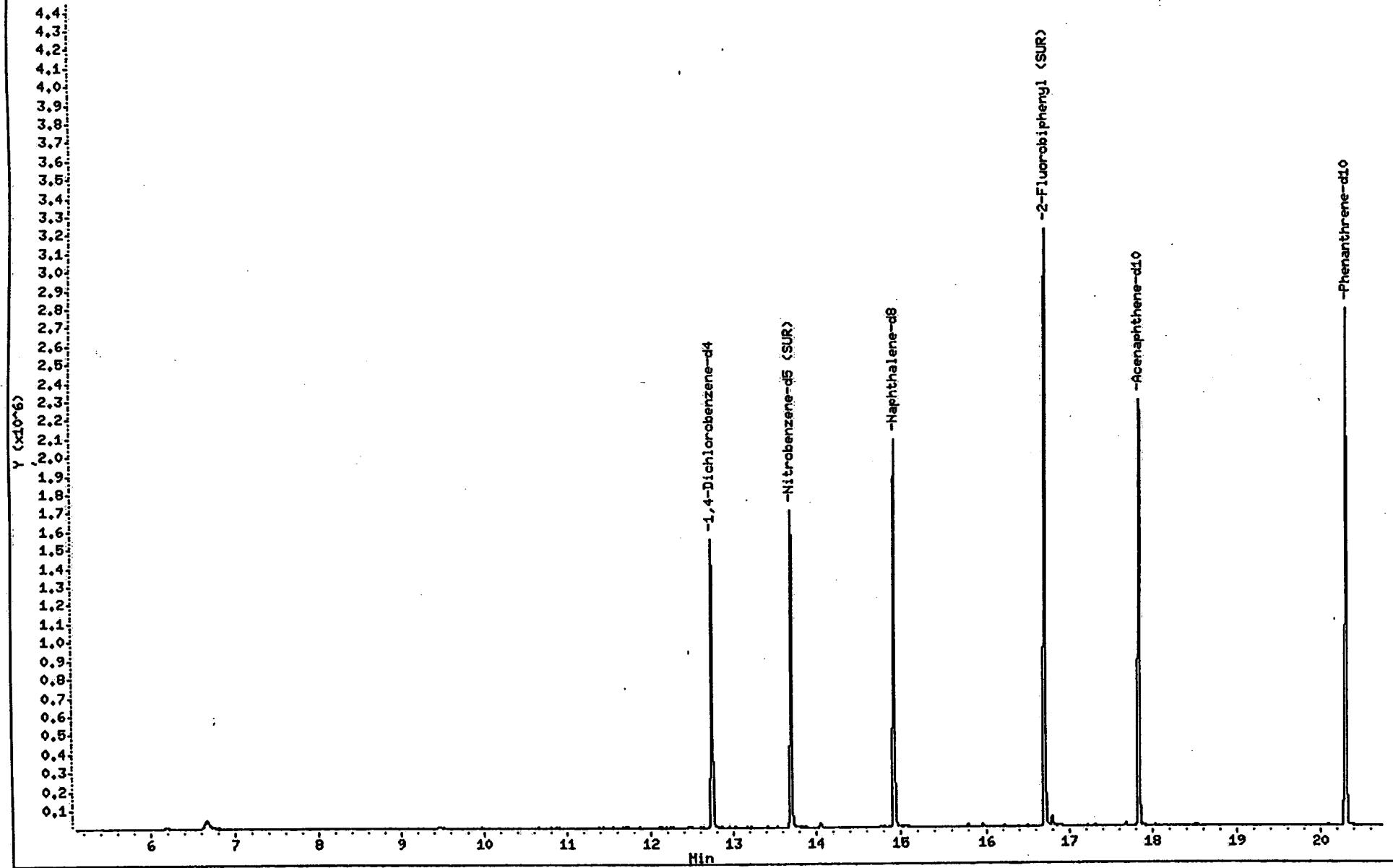
Column phase: DB-5

Instrument: BNAHS2.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9281.d (Part 1 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9281.d

Date : 03-DEC-1998 15:29

Client ID: Field_Blank

Sample Info: 98401;970;2;1;;

Purge Volume: 970.0

Column phase: DB-5

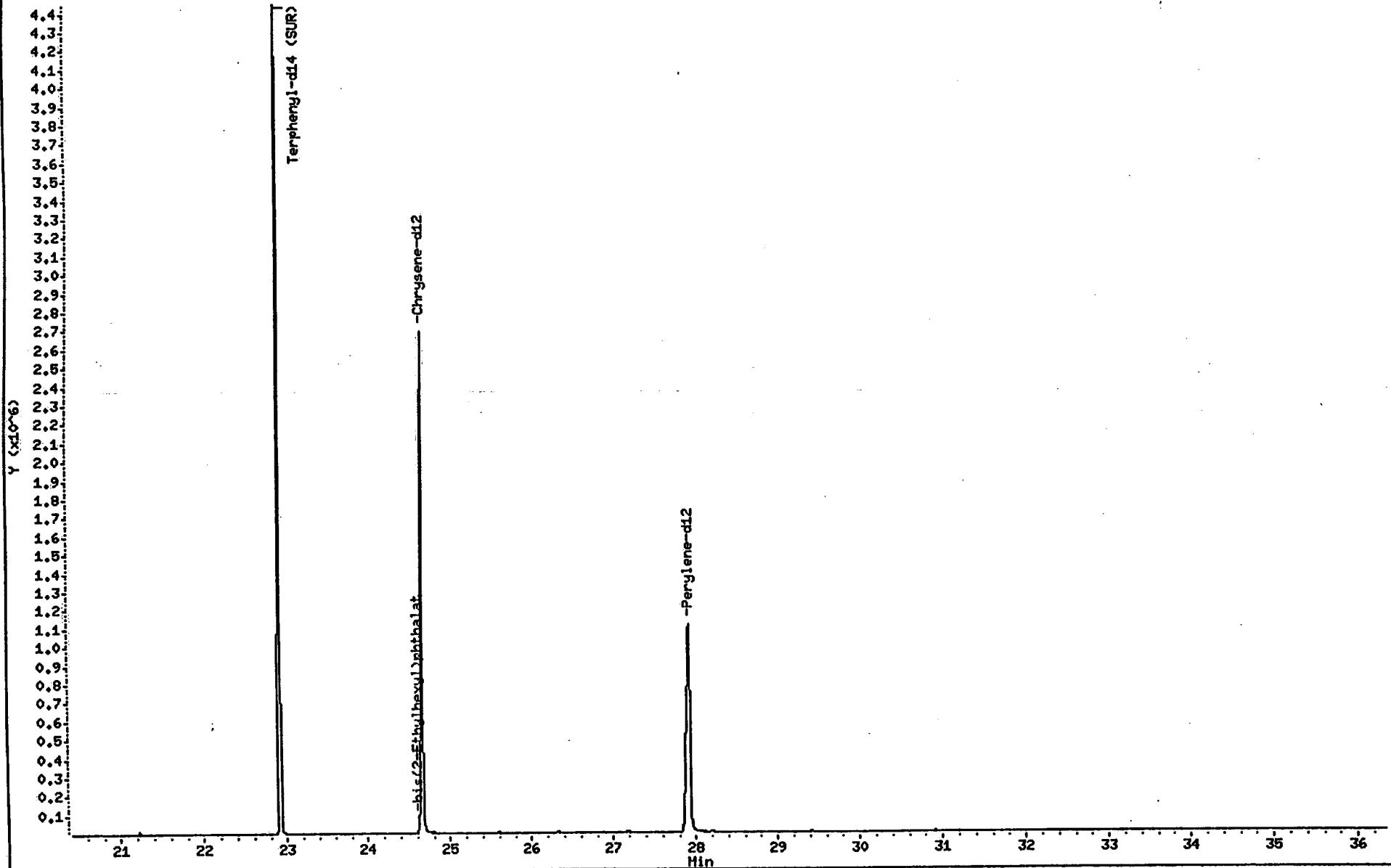
Instrument: BNAHS2.1

Operator: BNAHS 1

Column diameter: 0.53

60

/chem/BNAHS2.1/625/11-30-98/03nov98.b/s9281.d (Part 2 of 2)



Data File: /chem/BNAHS2.1/625/11-30-98/03nov98.b/s9281.d

Date : 03-DEC-1998 15:29

Client ID: Field_Blank

Instrument: BNAHS2.1

Sample Info: 98401;970;2;1;;

Operator: BNAHS 1

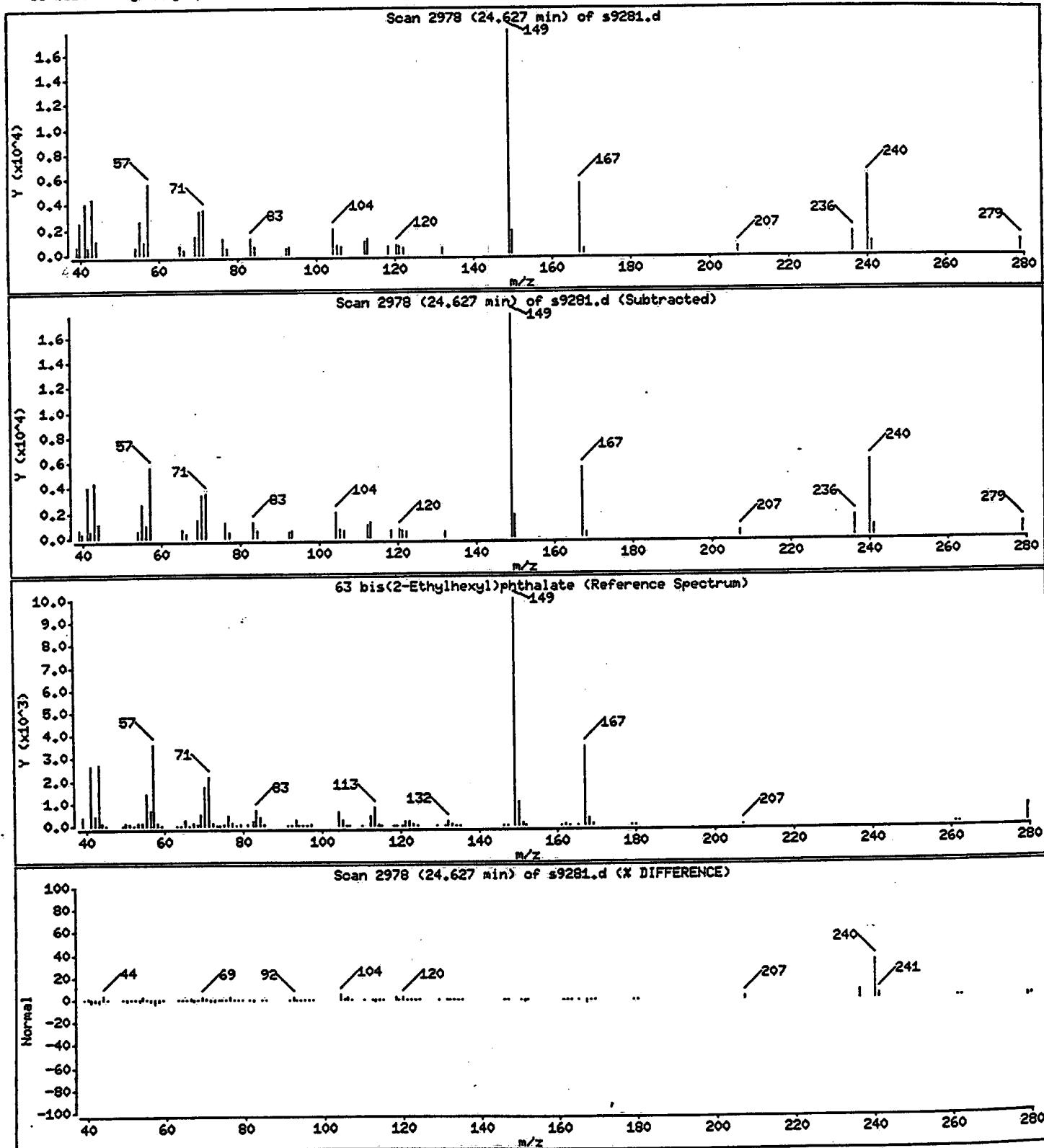
Purge Volume: 970.0

Column diameter: 0.53

Column phase: DB-5

Concentration: 1.3 ug/L

63 bis(2-Ethylhexyl)phthalate



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: S9177

DFTPP Injection Date: 11/30/98

Instrument ID: BNAMS2

DFTPP Injection Time: 1108

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	39.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.9
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	45.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.0% of mass 198	3.08
441	0.0 - 100.0% of mass 443	11.0 (86.0)2
442	40.0 - 110.0% of mass 198	65.2
443	17.0 - 23.0% of mass 442	12.8 (19.6)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 SSTD050	SSTD050	S9178	11/30/98	1128
02 SSTD120	SSTD120	S9180	11/30/98	1309
03 SSTD080	SSTD080	S9181	11/30/98	1353
04 SSTD020	SSTD020	S9182	11/30/98	1438
05 SSTD010	SSTD010	S9183	11/30/98	1522
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Data File: /chem/BNAMS2.i/625/11-30-98/30nov98.b/s9177.d

Date : 30-NOV-1998 11:08

Client ID:

Instrument: BNAMS2.i

Sample Info: SDFT334

Operator: BNA2

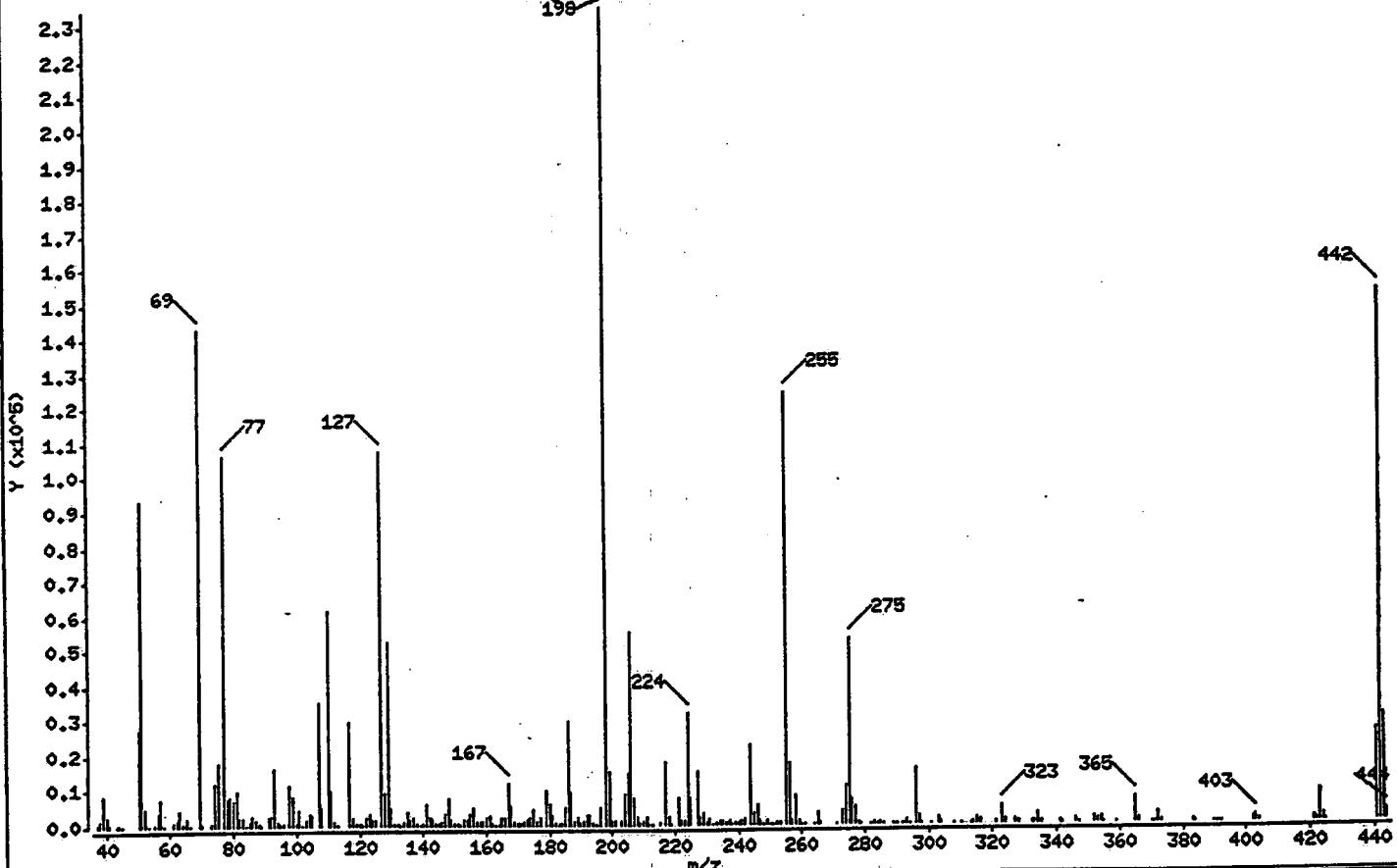
Column phase: DB-5

Column diameter: 0.25

1 dfpp

Average Spectrum: 6.770 to 6.783 min.

198



m/e	ION ABUNDANCE CRITERIA	X RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	39.78
68	Less than 2.00% of mass 69	0.00 < 0.00
69	Mass 69 relative abundance	60.89
70	Less than 2.00% of mass 69	0.15 < 0.24
127	40.00 - 60.00% of mass 198	45.84
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.53
275	10.00 - 30.00% of mass 198	22.43
365	Greater than 1.00% of mass 198	3.08
441	0.01 - 100.00% of mass 443	10.99 < 85.96
442	40.00 - 110.00% of mass 198	65.25
443	17.00 - 23.00% of mass 442	12.78 < 19.59

Data File: /chem/BNAHS2.i/625/11-30-98/30nov98.b/s9177.d

Date : 30-NOV-1998 11:08

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT334

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9177.d

Spectrum: Average Spectrum: 6.770 to 6.783 min.

Location of Maximum: 198.00

Number of points: 269

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	506 125.00	1418 195.00	166 278.00	766			
38.00	1458 127.00	107504 196.00	5042 279.00	97			
39.00	8634 128.00	9023 198.00	234496 282.00	74			
40.00	2532 129.00	52280 199.00	15313 283.00	465			
41.00	465 130.00	4631 200.00	1203 284.00	223			
43.00	222 131.00	806 201.00	831 285.00	719			
44.00	291 132.00	550 203.00	982 286.00	88			
45.00	192 133.00	71 204.00	8384 289.00	75			
50.00	27400 134.00	1214 205.00	14586 290.00	91			
51.00	93296 135.00	3590 206.00	54792 292.00	200			
52.00	4956 136.00	1434 207.00	7299 293.00	1124			
53.00	187 137.00	1994 208.00	2038 294.00	183			
55.00	769 138.00	339 209.00	703 296.00	15894			
56.00	3778 139.00	226 210.00	1094 297.00	2294			
57.00	7424 140.00	553 211.00	2026 298.00	92			
58.00	268 141.00	6199 212.00	123 301.00	167			
61.00	1225 142.00	1926 213.00	87 303.00	1839			
62.00	1377 143.00	1459 215.00	629 304.00	414			
63.00	4161 144.00	453 217.00	17944 308.00	177			
64.00	713 145.00	308 218.00	2284 310.00	191			
65.00	2084 146.00	1097 219.00	198 313.00	174			
66.00	255 147.00	3114 221.00	7513 314.00	755			
69.00	142784 148.00	7354 222.00	1166 315.00	1785			
70.00	349 149.00	1469 223.00	1044 316.00	831			
73.00	695 150.00	363 224.00	32032 321.00	406			
74.00	11900 151.00	692 225.00	7825 323.00	4896			
75.00	17944 152.00	234 227.00	15060 324.00	815			
77.00	106464 153.00	1791 228.00	2212 327.00	903			
78.00	7488 154.00	1489 229.00	3079 328.00	430			
79.00	8289 155.00	3137 230.00	519 332.00	374			
80.00	6839 156.00	4880 231.00	1352 333.00	273			
81.00	9702 157.00	975 232.00	192 334.00	2886			
82.00	1911 158.00	1271 233.00	297 335.00	677			
83.00	1899 159.00	852 234.00	963 341.00	597			
84.00	244 160.00	2012 235.00	991 342.00	83			

Data File: /chem/BNAHS2.i/625/11-30-98/30nov98.b/s9177.d

Date : 30-NOV-1998 11:08

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT334

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9177.d

Spectrum: Average Spectrum: 6.770 to 6.783 min.

Location of Maximum: 198.00

Number of points: 269

m/z	Y	m/z	Y	m/z	Y	m/z	Y
85.00	1323	161.00	2723	236.00	737	346.00	1024
86.00	2533	162.00	788	237.00	972	347.00	224
87.00	1352	163.00	230	238.00	193	352.00	1625
88.00	287	164.00	179	239.00	665	353.00	965
89.00	210	165.00	2223	240.00	440	354.00	1545
91.00	2208	166.00	2082	241.00	875	355.00	178
92.00	2637	167.00	11596	242.00	1501	359.00	73
93.00	16325	168.00	5309	244.00	22656	365.00	7214
94.00	950	169.00	926	245.00	3042	366.00	828
95.00	331	170.00	488	246.00	5404	370.00	74
96.00	544	171.00	529	247.00	1005	371.00	178
98.00	11328	172.00	1038	248.00	158	372.00	2518
99.00	8255	173.00	1506	249.00	834	373.00	649
100.00	750	174.00	2294	250.00	239	383.00	762
101.00	4246	175.00	4254	251.00	135	384.00	169
102.00	202	176.00	1202	252.00	334	390.00	231
103.00	1356	177.00	1951	253.00	695	391.00	193
104.00	3072	179.00	9700	255.00	123872	392.00	80
105.00	2675	180.00	5883	256.00	17296	402.00	1015
107.00	35264	181.00	2766	257.00	903	403.00	1363
108.00	4996	182.00	542	258.00	8092	404.00	477
110.00	61704	183.00	137	259.00	1179	421.00	1142
111.00	9522	184.00	688	260.00	184	422.00	281
112.00	1183	185.00	4658	261.00	107	423.00	8645
113.00	219	186.00	29544	264.00	146	424.00	1762
117.00	29416	187.00	8905	265.00	3093	425.00	168
118.00	2069	188.00	911	266.00	534	441.00	25760
119.00	274	189.00	1971	271.00	260	442.00	153024
120.00	448	190.00	326	273.00	3731	443.00	29976
121.00	104	191.00	991	274.00	10664	444.00	2897
122.00	2207	192.00	2800	275.00	52616		
123.00	3492	193.00	2922	276.00	6841		
124.00	1748	194.00	562	277.00	4907		

Data File: /chem/BNAHS2.i/625/11-30-98/30nov98.b/s9177.d

Date : 30-NOV-1998 11:08

Client ID:

Sample Info: SDFT334

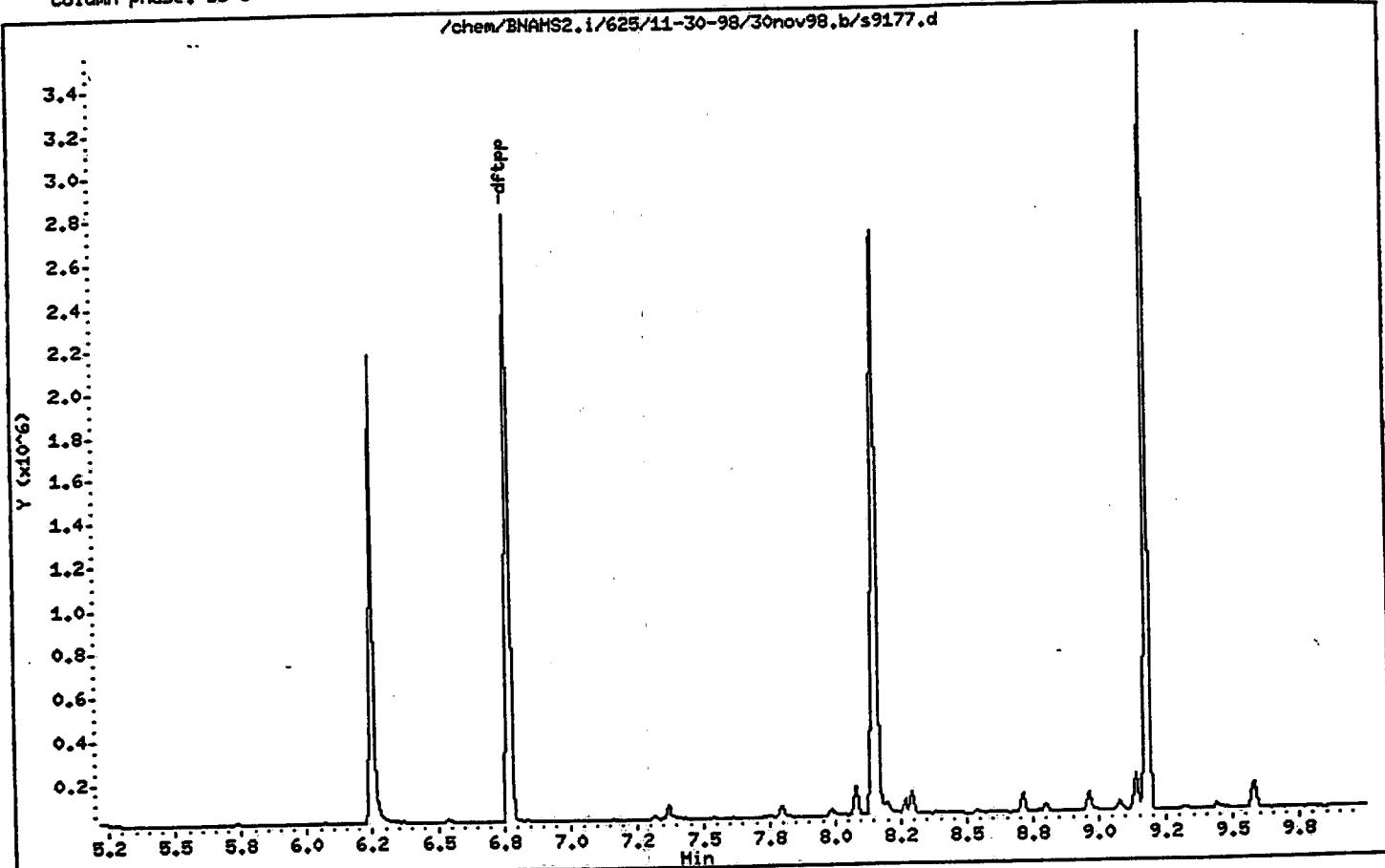
Instrument: BNAHS2.i

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

/chem/BNAHS2.i/625/11-30-98/30nov98.b/s9177.d



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: S9239

DFTPP Injection Date: 12/02/98

Instrument ID: BNAMS2

DFTPP Injection Time: 0859

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	62.0
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	45.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	21.7
365	Greater than 1.0% of mass 198	2.90
441	0.0 - 100.0% of mass 443	11.5 (87.9)2
442	40.0 - 110.0% of mass 198	68.2
443	17.0 - 23.0% of mass 442	13.1 (19.2)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 SSTID336	SSTID336	S9240	12/02/98	0919
02 MW-25R	98397	S9269	12/03/98	0632
03 MW-14J	98398	S9270	12/03/98	0716
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Data File: /chen/BNAHS2.i/625/11-30-98/02dec98.b/s9239.d

Date : 02-DEC-1998 08:59

Client ID:

Sample Info: SDFT336

Instrument: BNAHS2.i

Operator: BNA2

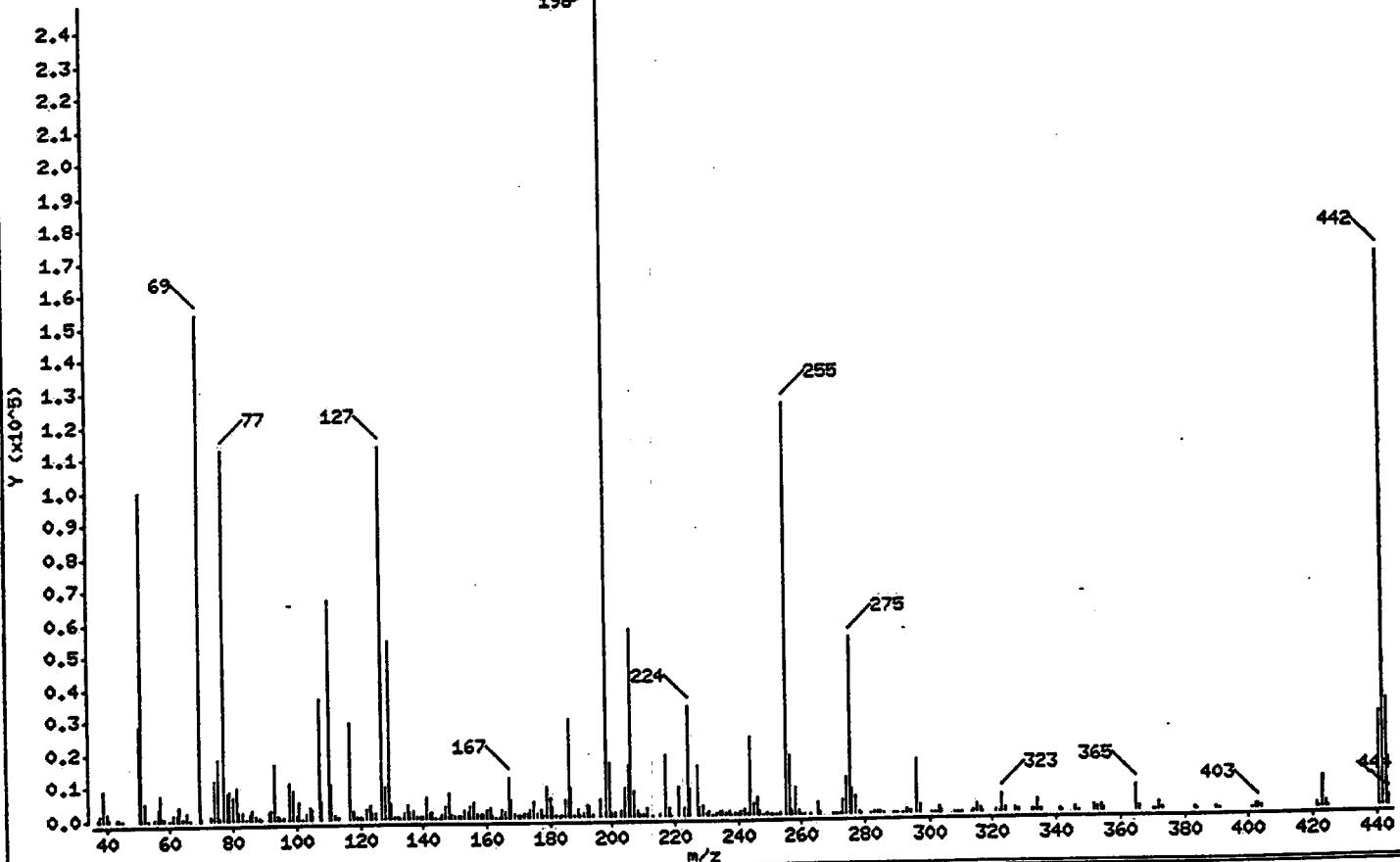
Column diameter: 0.25

Column phase: DB-5

1 dftpp

Average Spectrum: 6.758 to 6.771 min.

198



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
1	1	
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	40.32
68	Less than 2.00% of mass 69	0.00 < 0.00
69	Mass 69 relative abundance	62.04
70	Less than 2.00% of mass 69	0.25 < 0.41
127	40.00 - 60.00% of mass 198	45.45
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.50
275	10.00 - 30.00% of mass 198	21.68
365	Greater than 1.00% of mass 198	2.90
441	0.01 - 100.00% of mass 443	11.52 < 87.88
442	40.00 - 110.00% of mass 198	68.22
443	17.00 - 23.00% of mass 442	13.11 < 19.22

Data File: /chem/BNAHS2.i/625/11-30-98/02dec98.b/s9239.d

Date : 02-DEC-1998 08:59

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT336

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9239.d

Spectrum: Average Spectrum: 6.758 to 6.771 min.

Location of Maximum: 198.00

Number of points: 274

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	568	124.00	1854	194.00	777	278.00	697
38.00	1522	125.00	1528	196.00	5408	279.00	89
39.00	9041	127.00	112720	198.00	248000	282.00	78
40.00	2513	128.00	9810	199.00	16121	283.00	463
41.00	437	129.00	54384	200.00	1233	284.00	353
43.00	316	130.00	4538	201.00	882	285.00	754
44.00	426	131.00	841	203.00	1824	286.00	100
45.00	275	132.00	410	204.00	8476	289.00	229
50.00	28400	133.00	87	205.00	15140	290.00	75
51.00	100000	134.00	1530	206.00	57120	292.00	77
52.00	5383	135.00	3820	207.00	7532	293.00	1105
53.00	191	136.00	1572	208.00	1994	294.00	313
55.00	766	137.00	2031	209.00	643	296.00	16154
56.00	3392	138.00	544	210.00	620	297.00	2046
57.00	7644	139.00	345	211.00	2292	301.00	153
58.00	431	140.00	844	213.00	84	302.00	114
60.00	143	141.00	6457	215.00	758	303.00	1811
61.00	1588	142.00	1910	217.00	18456	304.00	519
62.00	1459	143.00	1477	218.00	2057	308.00	170
63.00	4103	144.00	264	219.00	194	309.00	175
64.00	748	145.00	258	221.00	8346	310.00	167
65.00	2258	146.00	1189	223.00	2126	313.00	159
66.00	219	147.00	3481	224.00	32984	314.00	789
69.00	153856	148.00	7381	225.00	7718	315.00	2008
70.00	626	149.00	1416	227.00	14932	316.00	962
73.00	1006	150.00	424	228.00	2158	317.00	70
74.00	12043	151.00	843	229.00	2702	321.00	802
75.00	18064	152.00	317	230.00	341	322.00	111
76.00	798	153.00	2109	231.00	1198	323.00	5245
77.00	112472	154.00	1461	232.00	74	324.00	878
78.00	8019	155.00	3385	233.00	311	327.00	1022
79.00	8807	156.00	4333	234.00	1003	328.00	558
80.00	6841	157.00	1031	235.00	938	332.00	294
81.00	9867	158.00	1246	236.00	799	333.00	413
82.00	2015	159.00	941	237.00	980	334.00	3399

Data File: /chem/BNAHS2.i/625/11-30-98/02dec98.b/s9239.d

Date : 02-DEC-1998 08:59

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT336

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9239.d

Spectrum: Average Spectrum: 6.758 to 6.771 min.

Location of Maximum: 198.00

Number of points: 274

m/z	y	m/z	y	m/z	y	m/z	y
83.00	2023	160.00	2286	238.00	83	335.00	805
84.00	186	161.00	2838	239.00	547	341.00	691
85.00	1500	162.00	727	240.00	374	342.00	72
86.00	2709	163.00	217	241.00	878	346.00	955
87.00	1277	164.00	104	242.00	1609	347.00	122
88.00	569	165.00	2293	243.00	570	352.00	1595
89.00	231	166.00	1665	244.00	23416	353.00	1087
91.00	2064	167.00	11946	245.00	3219	354.00	1549
92.00	2673	168.00	5115	246.00	5287	355.00	340
93.00	16279	169.00	954	247.00	1130	365.00	7193
94.00	1088	170.00	480	248.00	186	366.00	981
95.00	346	171.00	609	249.00	797	370.00	86
96.00	534	172.00	1183	250.00	72	371.00	183
98.00	10984	173.00	1374	251.00	173	372.00	2524
99.00	8680	174.00	2395	252.00	201	373.00	640
100.00	872	175.00	4495	253.00	712	383.00	674
101.00	5045	176.00	1146	255.00	125000	384.00	238
102.00	256	177.00	1999	256.00	17728	390.00	368
103.00	1611	178.00	378	257.00	1231	391.00	96
104.00	3174	179.00	9222	258.00	7857	401.00	75
105.00	2660	180.00	5853	259.00	1195	402.00	1111
107.00	36680	181.00	3026	260.00	175	403.00	1404
108.00	5126	182.00	559	261.00	125	404.00	406
110.00	66656	183.00	67	263.00	87	421.00	1124
111.00	9993	184.00	752	265.00	3207	422.00	284
112.00	1266	185.00	4957	266.00	474	423.00	9146
113.00	403	186.00	29824	270.00	191	424.00	1806
117.00	29184	187.00	8825	271.00	246	425.00	194
118.00	2240	188.00	831	272.00	85	441.00	28568
119.00	385	189.00	2208	273.00	3739	442.00	169152
120.00	386	190.00	386	274.00	10629	443.00	32512
121.00	79	191.00	977	275.00	53768	444.00	3125
122.00	2728	192.00	3294	276.00	7381		
123.00	4116	193.00	3106	277.00	4932		

Data File: /chem/BNAHS2.1/625/11-30-98/02dec98.b/s9239.d

Date : 02-DEC-1998 08:59

Client ID:

Sample Info: SDFT336

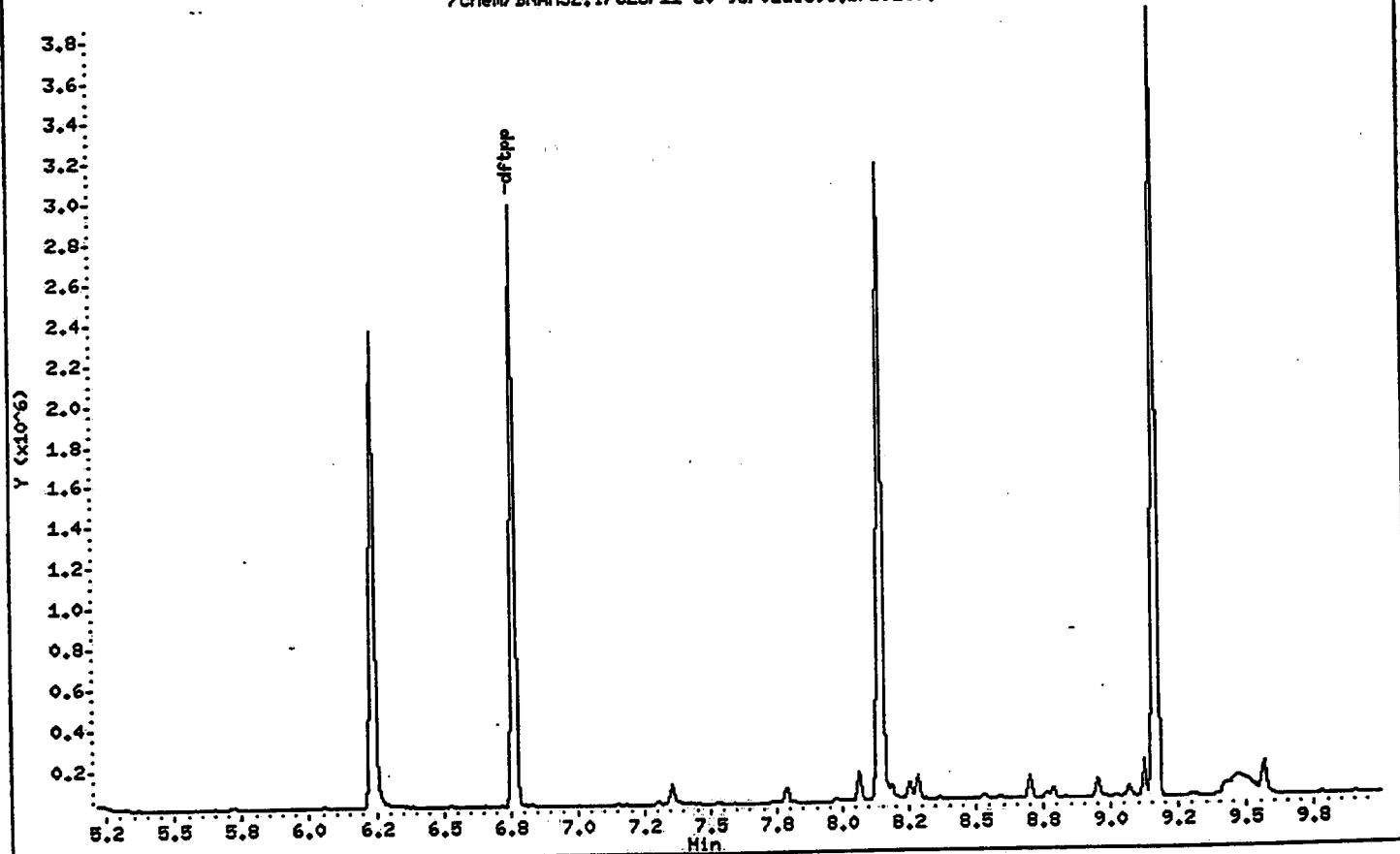
Instrument: BNAHS2.1

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

/chem/BNAHS2.1/625/11-30-98/02dec98.b/s9239.d



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: S9272

DFTPP Injection Date: 12/03/98

Instrument ID: BNAMS2

DFTPP Injection Time: 0914

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	59.8
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	45.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	22.8
365	Greater than 1.0% of mass 198	3.21
441	0.0 - 100.0% of mass 443	12.0 (86.5)2
442	40.0 - 110.0% of mass 198	72.1
443	17.0 - 23.0% of mass 442	13.9 (19.3)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 SSTD337	SSTD337	S9273	12/03/98	0932
02 MW-15I	98395	S9278	12/03/98	1317
03 MW-15ID	98400	S9280	12/03/98	1444
04 FIELD BLANK	98401	S9281	12/03/98	1529
05 MW-22R	98396	S9282	12/03/98	1613
06 MW-4	98399	S9294	12/04/98	0059
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9272.d

Date : 03-DEC-1998 09:14

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT337

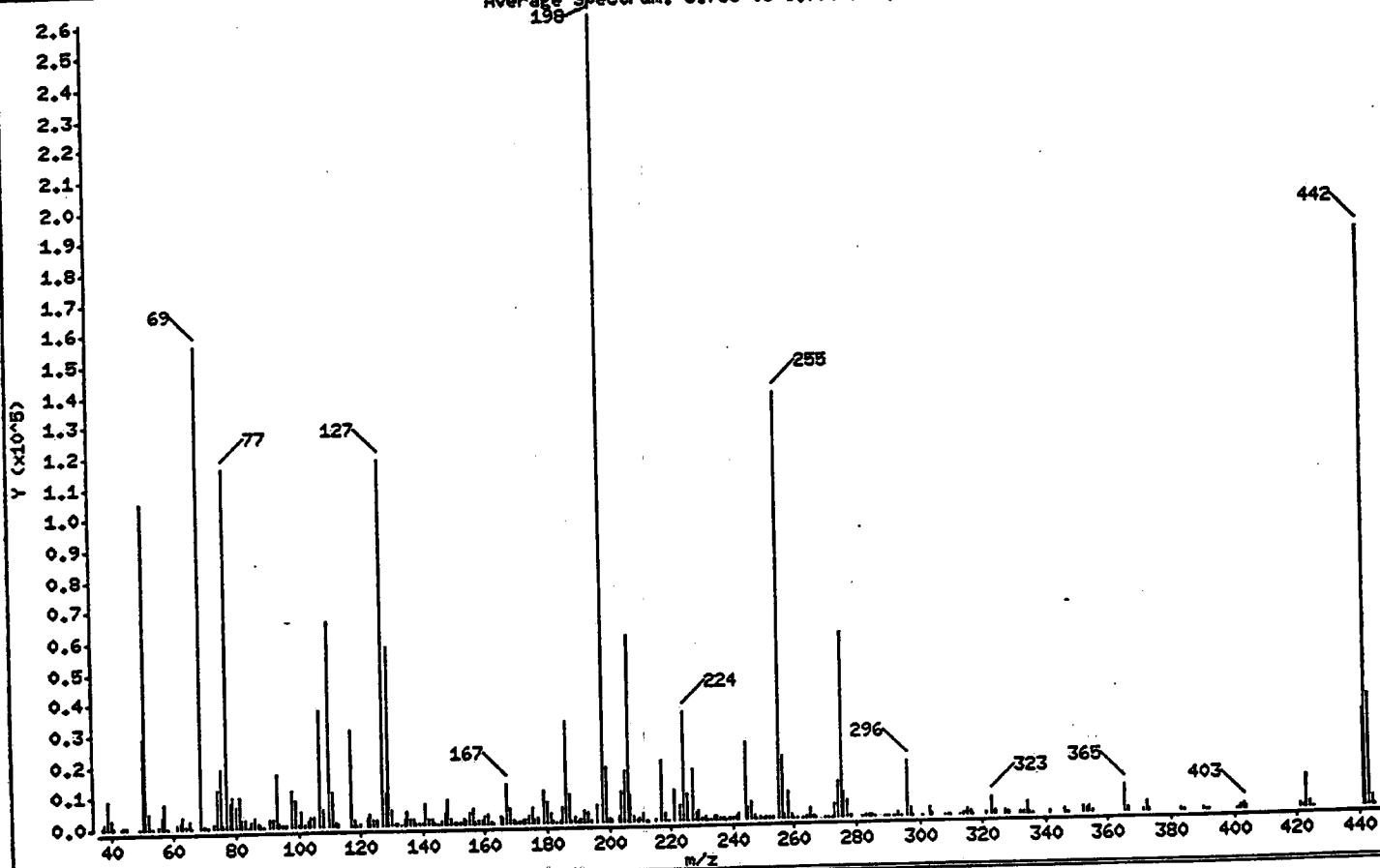
Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

1 dftpp

Average Spectrum: 6.756 to 6.770 min.



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	40.31
68	Less than 2.00% of mass 69	0.00 < 0.00
69	Mass 69 relative abundance	59.83
70	Less than 2.00% of mass 69	0.24 < 0.41
127	40.00 - 60.00% of mass 198	45.21
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.58
275	10.00 - 30.00% of mass 198	22.75
365	Greater than 1.00% of mass 198	3.21
441	0.01 - 100.00% of mass 443	12.02 < 86.50
442	40.00 - 110.00% of mass 198	72.11
443	17.00 - 23.00% of mass 442	13.90 < 19.28

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9272.d

Date : 03-DEC-1998 09:14

Client ID:

Instrument: BNAHS2.i

Sample Info: SDFT337

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9272.d

Spectrum; Average Spectrum: 6.756 to 6.770 min.

Location of Maximum: 198.00

Number of points: 273

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	472	124.00	1791	198.00	260928	278.00	772
38.00	1550	125.00	1699	199.00	17176	282.00	173
39.00	9020	127.00	117976	200.00	1444	283.00	506
40.00	2948	128.00	10396	201.00	864	284.00	422
41.00	333	129.00	57384	203.00	1841	285.00	891
43.00	70	130.00	4858	204.00	9343	286.00	81
44.00	618	131.00	865	205.00	16193	289.00	176
45.00	315	132.00	332	206.00	59968	290.00	83
49.00	73	133.00	135	207.00	8252	292.00	233
50.00	29000	134.00	1748	208.00	2005	293.00	1142
51.00	105184	135.00	4101	209.00	851	294.00	247
52.00	4751	136.00	1586	210.00	1220	296.00	17256
53.00	113	137.00	1851	211.00	2532	297.00	2466
55.00	647	138.00	318	212.00	84	298.00	97
56.00	3437	139.00	342	213.00	70	301.00	101
57.00	7687	140.00	448	215.00	782	303.00	2237
58.00	275	141.00	6835	217.00	19016	304.00	596
61.00	1289	142.00	2096	218.00	2345	308.00	198
62.00	1504	143.00	1568	219.00	217	309.00	107
63.00	3820	144.00	485	221.00	9386	310.00	76
64.00	570	145.00	156	223.00	4651	313.00	174
65.00	2226	146.00	1106	224.00	34952	314.00	825
66.00	209	147.00	3434	225.00	8180	315.00	1942
69.00	156096	148.00	7641	227.00	15913	316.00	1000
70.00	636	149.00	1675	228.00	2291	317.00	199
71.00	70	150.00	357	229.00	3223	321.00	626
73.00	1254	151.00	897	230.00	429	323.00	5687
74.00	11705	152.00	451	231.00	1370	324.00	960
75.00	18648	153.00	1972	232.00	221	327.00	1142
76.00	810	154.00	1459	233.00	97	328.00	462
77.00	115792	155.00	3397	234.00	942	332.00	419
78.00	7575	156.00	5016	235.00	1015	333.00	493
79.00	9656	157.00	873	236.00	816	334.00	3668
80.00	6895	158.00	1241	237.00	899	335.00	874
81.00	9374	159.00	1066	238.00	78	336.00	89

Data File: /chem/BNAMS2.i/625/11-30-98/03nov98.b/s9272.d

Date : 03-DEC-1998 09:14

Client ID:

Instrument: BNAMS2.i

Sample Info: SDFT337

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: s9272.d

Spectrum: Average Spectrum: 6.756 to 6.770 min.

Location of Maximum: 198.00

Number of points: 273

m/z	Y	m/z	Y	m/z	Y	m/z	Y
82.00	2398	160.00	2146	239.00	534	341.00	518
83.00	2133	161.00	3003	240.00	515	346.00	1204
84.00	225	162.00	829	241.00	957	347.00	71
85.00	1813	163.00	271	242.00	1753	352.00	1679
86.00	3070	165.00	2441	244.00	24872	353.00	1084
87.00	1243	166.00	1942	245.00	3483	354.00	1613
88.00	368	167.00	12502	246.00	5635	355.00	320
89.00	217	168.00	4806	247.00	1007	365.00	8368
91.00	2338	169.00	1083	248.00	153	366.00	953
92.00	2587	170.00	339	249.00	836	371.00	421
93.00	16600	171.00	527	250.00	158	372.00	2920
94.00	1130	172.00	1221	251.00	398	373.00	607
95.00	321	173.00	1457	252.00	431	383.00	729
96.00	598	174.00	2470	253.00	663	384.00	261
98.00	11484	175.00	4675	255.00	138048	390.00	373
99.00	8341	176.00	1301	256.00	19672	391.00	170
100.00	657	177.00	2022	257.00	938	392.00	91
101.00	4800	179.00	10211	258.00	8674	401.00	122
102.00	337	180.00	6637	259.00	1083	402.00	1245
103.00	1592	181.00	3084	260.00	116	403.00	1632
104.00	3221	182.00	378	261.00	196	404.00	497
105.00	2704	183.00	261	263.00	80	421.00	1463
107.00	37144	184.00	830	264.00	301	422.00	322
108.00	5392	185.00	4797	265.00	3271	423.00	10389
110.00	66136	186.00	32280	266.00	629	424.00	2069
111.00	10616	187.00	9061	267.00	73	425.00	131
112.00	1198	188.00	854	270.00	67	441.00	31368
113.00	398	189.00	2095	271.00	253	442.00	188160
117.00	30384	190.00	331	272.00	74	443.00	36264
118.00	2026	191.00	1107	273.00	4413	444.00	3153
119.00	247	192.00	3436	274.00	11218	445.00	113
120.00	503	193.00	3008	275.00	59368		
122.00	2391	194.00	676	276.00	7988		
123.00	3861	196.00	5596	277.00	5537		

Data File: /chem/BNAHS2.i/625/11-30-98/03nov98.b/s9272.d

Date : 03-DEC-1998 09:14

Client ID:

Sample Info: SDFT337

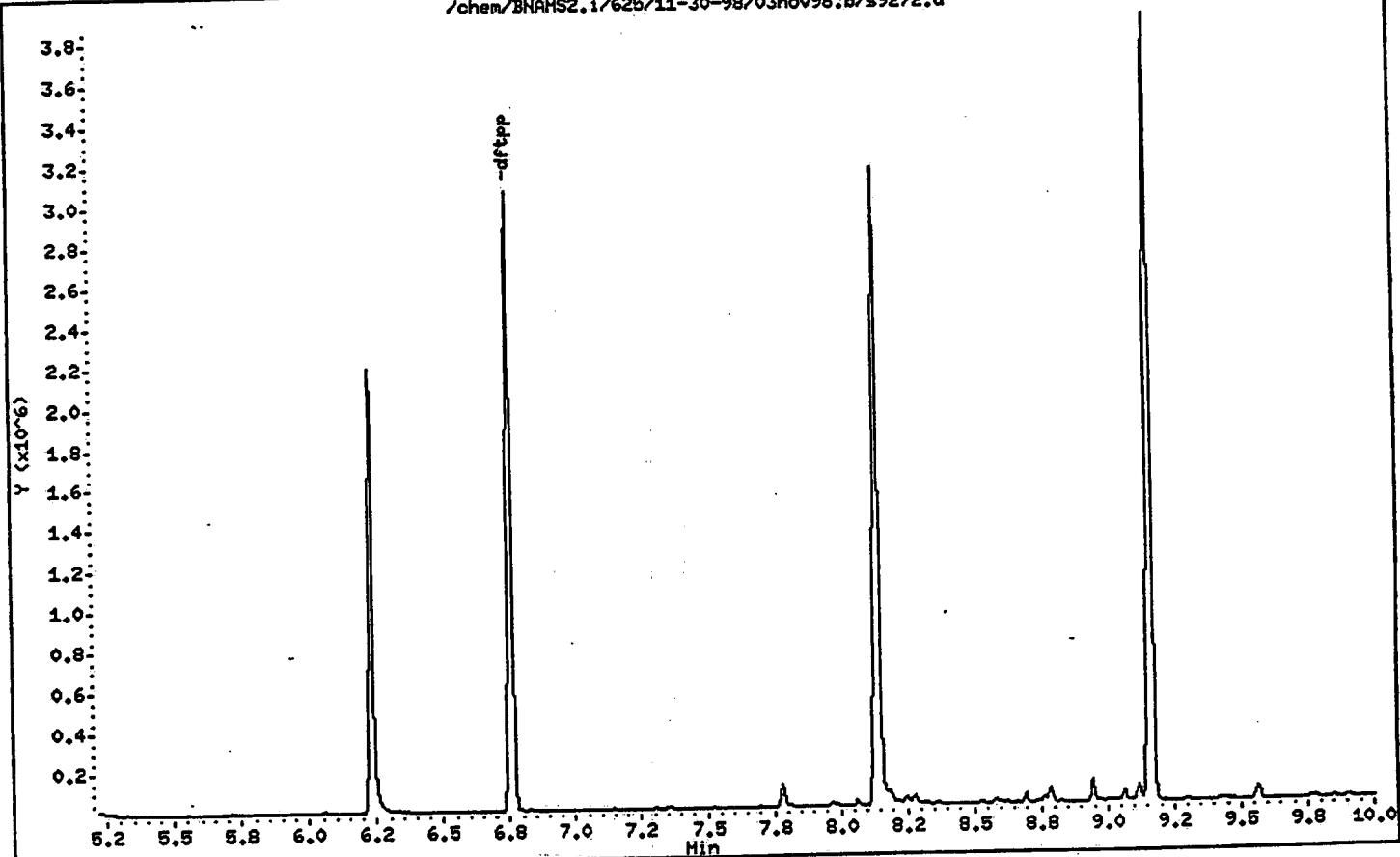
Instrument: BNAHS2.i

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

/chem/BNAHS2.i/625/11-30-98/03nov98.b/s9272.d



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: U5069

DFTPP Injection Date: 11/09/98

Instrument ID: BNAMS4

DFTPP Injection Time: 0912

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.5
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	48.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	20.2
365	Greater than 1.0% of mass 198	2.15
441	0.0 - 100.0% of mass 443	9.0 (78.9)2
442	40.0 - 110.0% of mass 198	56.1
443	17.0 - 23.0% of mass 442	11.4 (20.3)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 USTD050	USTD050	U5070	11/09/98	0948
02 USTD120	USTD120	U5071	11/09/98	1033
03 USTD080	USTD080	U5072	11/09/98	1117
04 USTD020	USTD020	U5073	11/09/98	1202
05 USTD010	USTD010	U5076	11/09/98	1423
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Data File: /chem/BNAMS4.1/625/11-09-98/09nov98.b/u5069.d

Date : 09-NOV-1998 09:12

Client ID:

Sample Info: UDFT313

Instrument: BNAMS4.1

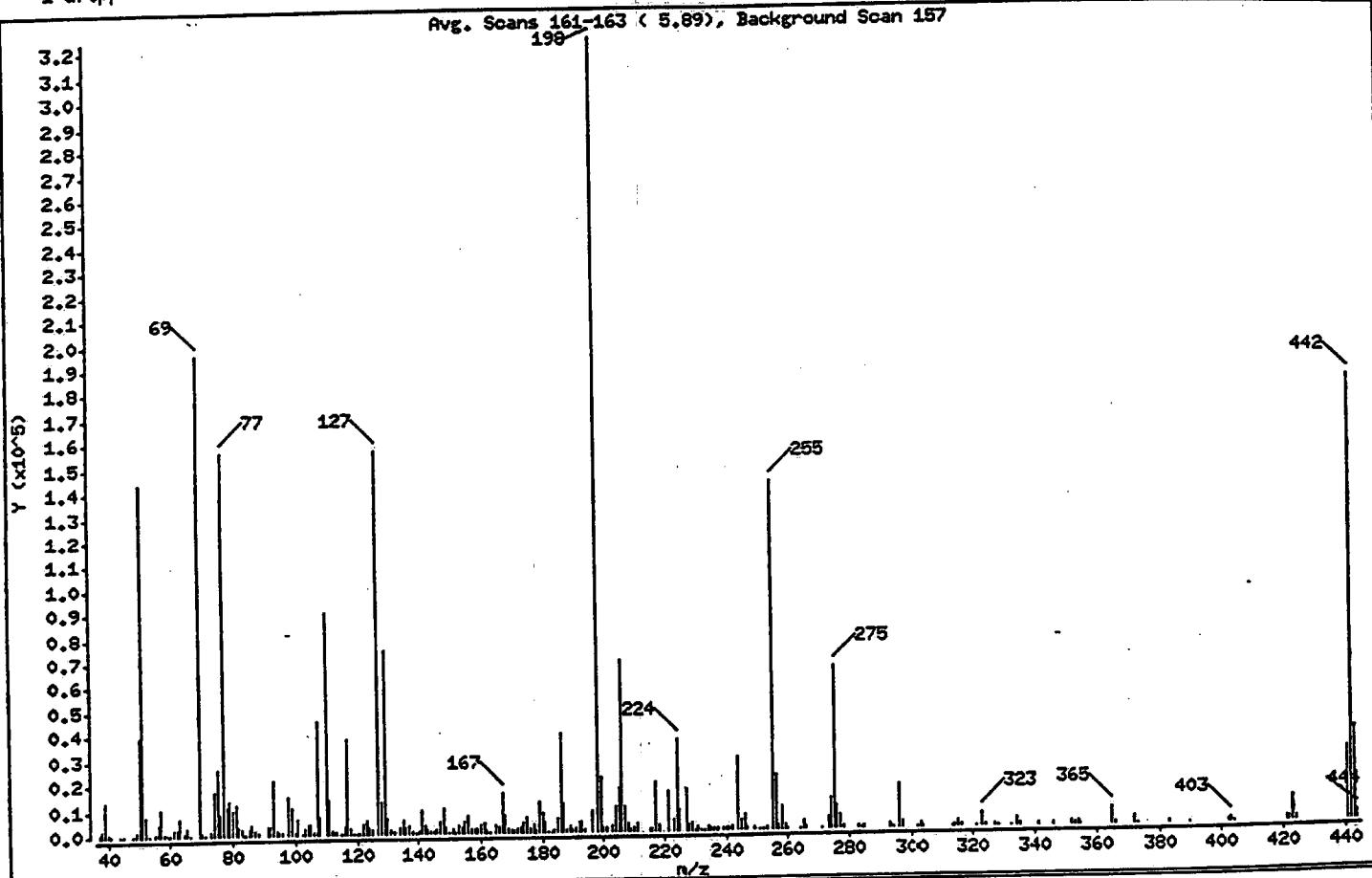
Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

1 dftpp

Avg. Scans 161-163 (5.89), Background Scan 157
199



n/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	44.39
69	Less than 2.00% of mass 69	0.00 < 0.00
69	Mass 69 relative abundance	60.46
70	Less than 2.00% of mass 69	0.12 < 0.20
127	40.00 - 60.00% of mass 198	48.33
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.72
275	10.00 - 30.00% of mass 198	20.20
365	Greater than 1.00% of mass 198	2.15
441	0.01 - 100.00% of mass 443	9.00 < 78.87
442	40.00 - 110.00% of mass 198	56.13
443	17.00 - 23.00% of mass 442	11.41 < 20.32

Data File: /chem/BNAHS4.i/625/11-09-98/09nov98.b/u5069.d

Date : 09-NOV-1998 09:12

Client ID:

Instrument: BNAHS4.i

Sample Info: UDFT313

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: u5069.d

Spectrum: Avg. Scans 161-163 < 5.89>, Background Scan 157

Location of Maximum: 198.00

Number of points: 248

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1057	112.00	1664	179.00	11996	257.00	1491
38.00	2437	113.00	457	180.00	7662	258.00	8731
39.00	13654	115.00	312	181.00	3507	259.00	1229
40.00	454	116.00	3197	182.00	302	260.00	120
41.00	80	117.00	37696	183.00	316	264.00	304
44.00	86	118.00	2490	184.00	748	265.00	3009
45.00	291	119.00	179	185.00	5583	266.00	413
48.00	108	120.00	365	186.00	39400	271.00	125
49.00	1372	121.00	140	187.00	10997	273.00	4512
50.00	39744	122.00	3437	188.00	753	274.00	12033
51.00	143808	123.00	5115	189.00	2605	275.00	65480
52.00	7162	124.00	2269	190.00	531	276.00	8636
53.00	208	125.00	1680	191.00	1372	277.00	5392
55.00	690	127.00	156608	192.00	3673	278.00	682
56.00	4763	128.00	12364	193.00	3837	283.00	518
57.00	10675	129.00	74672	194.00	648	284.00	102
58.00	398	130.00	5950	196.00	8201	285.00	708
59.00	107	131.00	1221	198.00	324096	293.00	1174
60.00	272	132.00	670	199.00	21760	294.00	134
61.00	2062	134.00	1903	200.00	1512	296.00	17400
62.00	2270	135.00	5568	201.00	1518	297.00	2140
63.00	6711	136.00	2146	203.00	2091	302.00	122
64.00	1064	137.00	2896	204.00	9794	303.00	1742
65.00	3062	138.00	568	205.00	16912	304.00	194
66.00	259	139.00	336	206.00	69600	313.00	106
69.00	195904	140.00	810	207.00	9842	314.00	596
70.00	387	141.00	8980	208.00	2728	315.00	1880
71.00	122	142.00	2811	209.00	675	316.00	802
73.00	1485	143.00	1856	210.00	1144	321.00	336
74.00	16968	144.00	426	211.00	2908	323.00	5485
75.00	26184	145.00	506	215.00	705	324.00	888
76.00	7998	146.00	1441	216.00	537	327.00	983
77.00	156480	147.00	4147	217.00	19280	328.00	294
78.00	11016	148.00	9992	218.00	2096	332.00	247
79.00	13097	149.00	1885	221.00	15761	334.00	3130

Data File: /chem/BNAHS4.i/625/11-09-98/09nov98.b/u5069.d

Date : 09-NOV-1998 09:12

Instrument: BNAHS4.i

Client ID:

Sample Info: UDFT313

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

Data File: u5069.d

Spectrum: Avg. Scans 161-163 (5.89), Background Scan 157

Location of Maximum: 198.00

Number of points: 248

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	9515 150.00	326 223.00	4403 335.00	827			
81.00	11970 151.00	1410 224.00	36728 341.00	514			
82.00	2801 152.00	235 225.00	8404 346.00	951			
83.00	2443 153.00	2997 227.00	16363 352.00	1531			
84.00	228 154.00	2071 228.00	2198 353.00	1050			
85.00	2139 155.00	4547 229.00	2946 354.00	1499			
86.00	3767 156.00	6781 230.00	336 355.00	102			
87.00	1373 157.00	1403 231.00	1243 365.00	6978			
88.00	522 158.00	1662 232.00	116 366.00	539			
91.00	2927 159.00	1126 233.00	288 372.00	2744			
92.00	3182 160.00	2673 234.00	1152 373.00	230			
93.00	21416 161.00	4068 235.00	961 383.00	603			
94.00	1242 162.00	960 236.00	779 390.00	290			
95.00	523 163.00	230 237.00	992 402.00	1115			
96.00	787 165.00	3129 239.00	533 403.00	1492			
98.00	14620 166.00	2570 240.00	466 404.00	320			
99.00	10723 167.00	15618 241.00	823 421.00	1348			
100.00	1030 168.00	6807 242.00	1659 422.00	1121			
101.00	5608 169.00	1234 244.00	29176 423.00	9648			
102.00	179 170.00	611 245.00	4059 424.00	1780			
103.00	2158 171.00	799 246.00	5642 441.00	29160			
104.00	3815 172.00	1339 247.00	990 442.00	181888			
105.00	3486 173.00	1866 249.00	953 443.00	36976			
106.00	647 174.00	3420 251.00	105 444.00	3140			
107.00	45472 175.00	5745 252.00	255				
108.00	6709 176.00	1684 253.00	491				
110.00	89960 177.00	2741 255.00	142656				
111.00	13367 178.00	474 256.00	21256				

Data File: /chem/BNAHS4.i/625/11-09-98/09nov98.b/u5069.d

Date : 09-NOV-1998 09:12

Client ID:

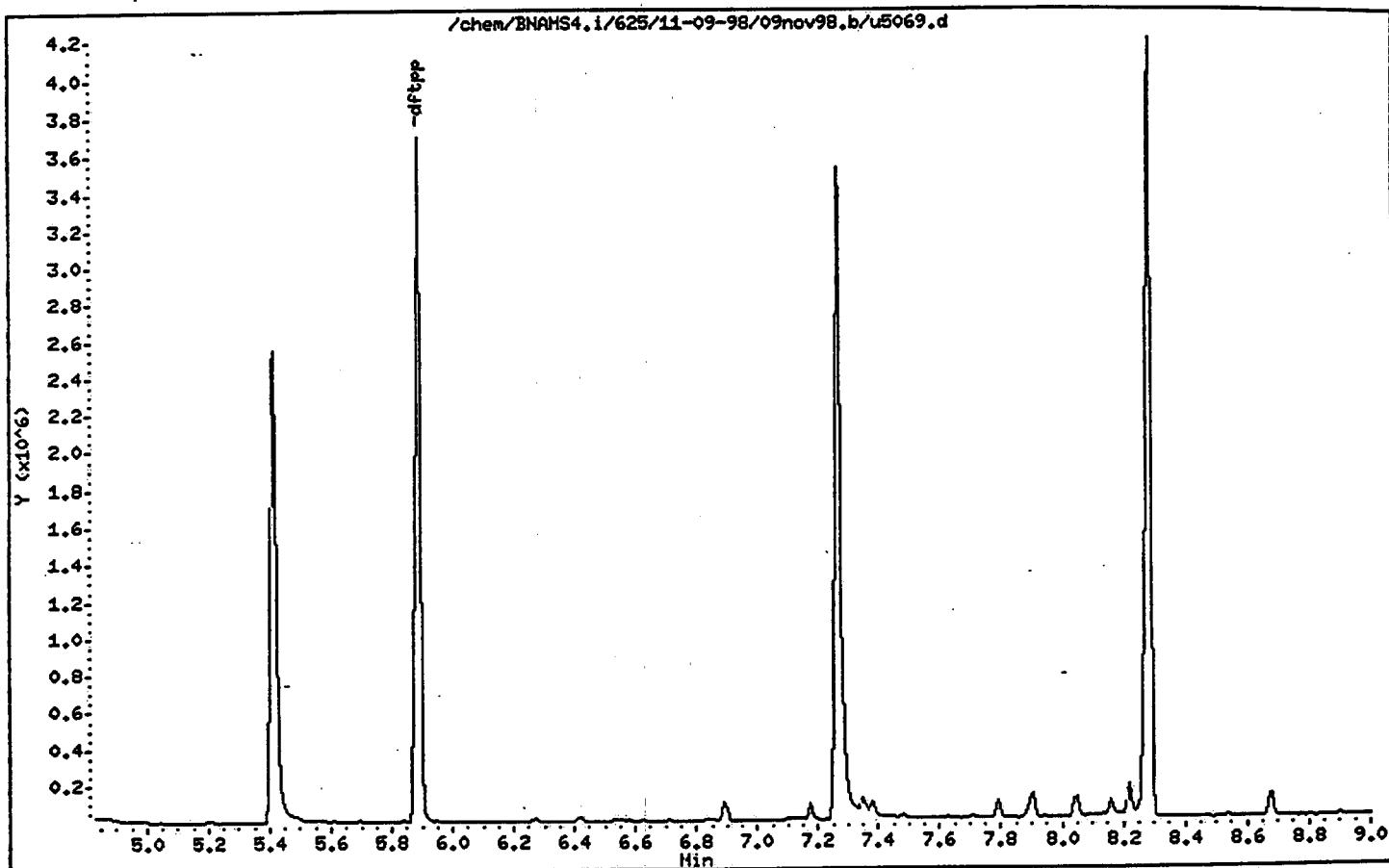
Instrument: BNAHS4.i

Sample Info: UDFT313

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: U5475

DFTPP Injection Date: 12/01/98

Instrument ID: BNAMS4

DFTPP Injection Time: 1131

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.4
68	Less than 2.0% of mass 69	0.5 (0.8)1
69	Mass 69 relative abundance	66.0
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	52.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	21.4
365	Greater than 1.0% of mass 198	2.53
441	0.0 - 100.0% of mass 443	10.1 (79.6)2
442	40.0 - 110.0% of mass 198	63.9
443	17.0 - 23.0% of mass 442	12.6 (19.8)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT ID	LAB SAMPLE NO.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	USTD335	USTD335	U5476	12/01/98	1148
02	WB328	WB328	U5482	12/01/98	1616
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Data File: /chem/BNAHS4.i/625/11-09-98/01dec98.b/u5475.d

Date : 01-DEC-1998 11:31

Client ID:

Sample Info: UDFT335

Instrument: BNAHS4.i

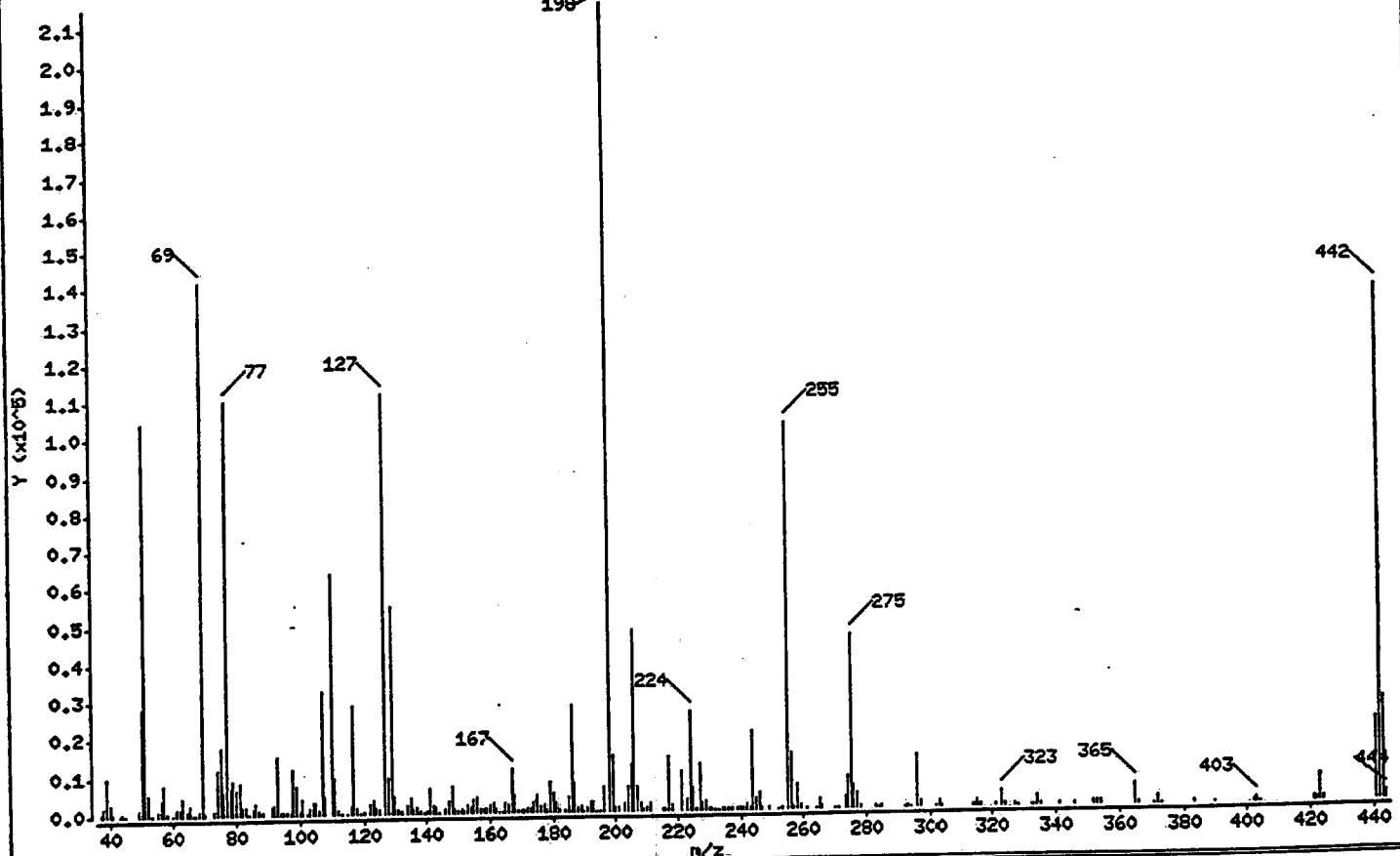
Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

1 dftpp

Average Spectrum: 5.810 to 5.823 min.
198



n/e	ION ABUNDANCE CRITERIA	X RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	48.43
68	Less than 2.00% of mass 69	0.55 (< 0.83)
69	Mass 69 relative abundance	65.95
70	Less than 2.00% of mass 69	0.12 (< 0.18)
127	40.00 - 60.00% of mass 198	52.00
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.81
275	10.00 - 30.00% of mass 198	21.43
365	Greater than 1.00% of mass 198	2.53
441	0.01 - 100.00% of mass 443	10.05 (< 79.64)
442	40.00 - 110.00% of mass 198	63.87
443	17.00 - 23.00% of mass 442	12.62 (< 19.77)

Date : 01-DEC-1998 11:31

Client ID:

Instrument: BNAHS4.i

Sample Info: UDFT335

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

Data File: u5475.d

Spectrum: Average Spectrum: 5.810 to 5.823 min.

Location of Maximum: 198.00

Number of points: 281

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	472	111.00	9597	179.00	8121	256.00	14733
38.00	1872	112.00	1054	180.00	5179	257.00	648
39.00	9664	113.00	224	181.00	2651	258.00	6357
40.00	2887	115.00	152	182.00	314	259.00	923
41.00	264	116.00	2184	184.00	639	261.00	112
43.00	122	117.00	28696	185.00	4165	264.00	164
44.00	594	118.00	1585	186.00	28312	265.00	2558
45.00	146	119.00	138	187.00	7399	266.00	625
49.00	1308	120.00	349	188.00	942	270.00	114
50.00	28000	122.00	2615	189.00	1513	271.00	191
51.00	104016	123.00	3404	190.00	221	273.00	3150
52.00	5491	124.00	1638	191.00	999	274.00	8506
53.00	126	125.00	1138	192.00	2544	275.00	46032
55.00	866	127.00	111696	193.00	2575	276.00	5804
56.00	4064	128.00	9376	194.00	195	277.00	4146
57.00	7868	129.00	54944	195.00	168	278.00	554
58.00	270	130.00	4506	196.00	6506	283.00	497
60.00	108	131.00	800	198.00	214724	284.00	143
61.00	1268	132.00	401	199.00	14631	285.00	414
62.00	1642	134.00	1761	200.00	864	292.00	108
63.00	4304	135.00	3941	201.00	765	293.00	632
64.00	964	136.00	1195	203.00	1822	294.00	113
65.00	2318	137.00	1628	204.00	6451	296.00	13938
66.00	104	138.00	526	205.00	12366	297.00	1539
67.00	111	139.00	145	206.00	47752	302.00	152
68.00	1172	140.00	608	207.00	6432	303.00	1275
69.00	141632	141.00	6187	208.00	1817	304.00	142
70.00	259	142.00	2100	209.00	444	314.00	404
73.00	1077	143.00	1404	210.00	1119	315.00	1322
74.00	11620	144.00	185	211.00	1733	316.00	467
75.00	17896	146.00	942	215.00	602	321.00	402
76.00	6042	147.00	2933	216.00	565	323.00	3838
77.00	110128	148.00	7059	217.00	14179	324.00	411
78.00	6850	149.00	946	218.00	1443	327.00	668
79.00	8891	150.00	405	221.00	10310	328.00	156

Data File: /chem/BNAHS4.i/625/11-09-98/01dec98.b/u5475.d

Date : 01-DEC-1998 11:31

Client ID:

Instrument: BNAHS4.i

Sample Info: UDFT335

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

Data File: u5475.d

Spectrum: Average Spectrum: 5.810 to 5.823 min.

Location of Maximum: 198.00

Number of points: 251

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	6272 151.00	782 223.00	2814 332.00	112			
81.00	6182 152.00	248 224.00	26312 333.00	201			
82.00	2183 153.00	1807 225.00	5859 334.00	2244			
83.00	1738 154.00	1367 226.00	456 335.00	381			
84.00	177 155.00	3299 227.00	12316 341.00	292			
85.00	1278 156.00	3988 228.00	1914 346.00	607			
86.00	2717 157.00	812 229.00	2336 352.00	1162			
87.00	1047 158.00	975 230.00	269 353.00	789			
88.00	306 159.00	826 231.00	620 354.00	872			
91.00	2049 160.00	1760 232.00	113 365.00	5444			
92.00	2233 161.00	2563 233.00	145 366.00	336			
93.00	15490 162.00	783 234.00	687 371.00	147			
94.00	729 163.00	130 235.00	382 372.00	1760			
95.00	288 164.00	206 236.00	373 373.00	112			
96.00	581 165.00	2480 237.00	602 383.00	384			
97.00	145 166.00	1855 239.00	455 390.00	113			
98.00	11751 167.00	11381 240.00	319 402.00	708			
99.00	7163 168.00	4665 241.00	676 403.00	879			
100.00	574 169.00	692 242.00	1383 404.00	159			
101.00	4041 170.00	371 243.00	281 421.00	947			
102.00	156 171.00	486 244.00	20800 422.00	604			
103.00	1316 172.00	1211 245.00	2796 423.00	6975			
104.00	2981 173.00	1039 246.00	4201 424.00	1184			
105.00	2773 174.00	2223 247.00	598 441.00	21592			
106.00	892 175.00	4202 249.00	547 442.00	137152			
107.00	32440 176.00	1319 252.00	121 443.00	27112			
108.00	4418 177.00	1949 253.00	327 444.00	2200			
110.00	63816 178.00	549 255.00	102920				

Data File: /chem/BNAMS4.i/625/11-09-98/01dec98.b/u5475.d

Date : 01-DEC-1998 11:31

Client ID:

Instrument: BNAMS4.i

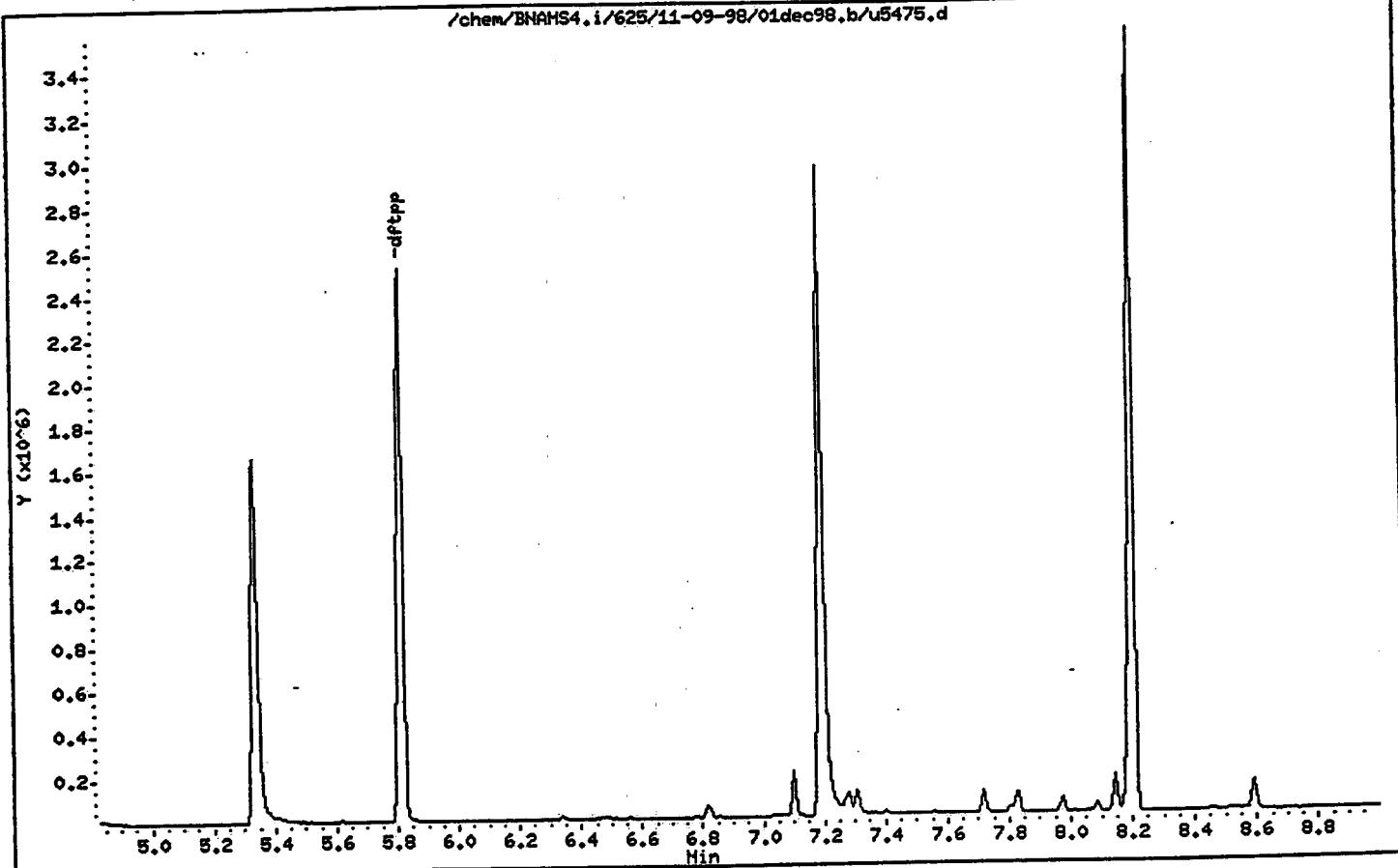
Sample Info: UDFT335

Operator: BN42

Column phase: DB-5

Column diameter: 0.25

/chem/BNAMS4.i/625/11-09-98/01dec98.b/u5475.d



SEMOVOLATILE METHOD BLANK SUMMARY

WB328

Matrix: WATER

Date Analyzed: 12/01/98

Level: LOW

Time Analyzed: 1616

Instrument ID: BNAMS4

Lab File ID: U5482

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT ID.	LAB SAMPLE NO	LAB FILE ID	DATE ANALYZED
01 MW-25R	98397	S9269	12/03/98
02 MW-14J	98398	S9270	12/03/98
03 MW-15I	98395	S9278	12/03/98
04 MW-15ID	98400	S9280	12/03/98
05 FIELD BLANK	98401	S9281	12/03/98
06 MW-22R	98396	S9282	12/03/98
07 MW-4	98399	S9294	12/04/98
08			
09			
10			
11			
12			
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14			
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28			
29			
30			

COMMENTS:

Client ID: WB328
Site:

Lab Sample No: WB328
Lab Job No: J322

Date Sampled: _____
Date Received: _____
Date Extracted: 11/24/98
Date Analyzed: 12/01/98
GC Column: DB-5
Instrument ID: BNAMS4.i
Lab File ID: u5482.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Phenol	ND	1.3
2-Chlorophenol	ND	2.8
2-Methylphenol	ND	2.3
4-Methylphenol	ND	2.2
2-Nitrophenol	ND	2.7
2,4-Dimethylphenol	ND	2.8
2,4-Dichlorophenol	ND	2.8
4-Chloro-3-methylphenol	ND	2.8
2,4,6-Trichlorophenol	ND	2.5
2,4,5-Trichlorophenol	ND	2.6
2,4-Dinitrophenol	ND	1.2
4-Nitrophenol	ND	0.7
4,6-Dinitro-2-methylphenol	ND	2.1
Pentachlorophenol	ND	2.7
Benzoic Acid	ND	10
N-Nitrosodimethylamine	ND	0.7
bis(2-Chloroethyl)ether	ND	0.9
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.1
1,2-Dichlorobenzene	ND	0.9
bis(2-chloroisopropyl)ether	ND	0.8
N-Nitroso-di-n-propylamine	ND	0.8
Hexachloroethane	ND	0.8
Nitrobenzene	ND	1.0
Isophorone	ND	0.8
bis(2-Chloroethoxy)methane	ND	1.0
1,2,4-Trichlorobenzene	ND	1.1
Naphthalene	ND	0.9
4-Chloroaniline	ND	0.5
Hexachlorobutadiene	ND	0.6
2-Methylnaphthalene	ND	0.9
Hexachlorocyclopentadiene	ND	0.4
2-Chloronaphthalene	ND	1.0
2-Nitroaniline	ND	0.5

Client ID: WB328
Site:

Lab Sample No: WB328
Lab Job No: J322

Date Sampled: _____
Date Received: _____
Date Extracted: 11/24/98
Date Analyzed: 12/01/98
GC Column: DB-5
Instrument ID: BNAMS4.i
Lab File ID: u5482.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Dimethylphthalate	ND	0.5
Acenaphthylene	ND	0.7
2,6-Dinitrotoluene	ND	0.4
3-Nitroaniline	ND	0.5
Acenaphthene	ND	0.6
Dibenzofuran	ND	0.5
2,4-Dinitrotoluene	ND	0.5
Diethylphthalate	ND	0.3
4-Chlorophenyl-phenylether	ND	0.6
Fluorene	ND	0.5
4-Nitroaniline	ND	0.3
N-Nitrosodiphenylamine	ND	0.4
4-Bromophenyl-phenylether	ND	0.4
Hexachlorobenzene	ND	0.4
Phenanthrene	ND	0.3
Anthracene	ND	0.3
Carbazole	ND	0.2
Di-n-butylphthalate	ND	0.3
Fluoranthene	ND	0.3
Pyrene	ND	0.2
Benzidine	ND	19
Butylbenzylphthalate	ND	0.5
3,3'-Dichlorobenzidine	ND	1.6
Benzo(a)anthracene	ND	0.2
Chrysene	ND	0.3
bis(2-Ethylhexyl)phthalate	ND	1.1
Di-n-octylphthalate	ND	0.3
Benzo(b)fluoranthene	ND	0.1
Benzo(k)fluoranthene	ND	0.1
Benzo(a)pyrene	ND	0.1
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.2
Benzo(g,h,i)perylene	ND	0.1
Pyridine	ND	10

Client ID: WB328
Site:

Lab Sample No: WB328
Lab Job No: J322

Date Sampled: _____
Date Received: _____
Date Extracted: 11/24/98
Date Analyzed: 12/01/98
GC Column: DB-5
Instrument ID: BNAMS4.i
Lab File ID: u5482.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Aniline	ND	0.7
Benzyl Alcohol	ND	0.5
1,2-Diphenylhydrazine	ND	0.4
Diphenyl	ND	10
Diphenyl Ether	ND	10
Acetophenone	ND	10
N,N-Dimethylaniline	ND	10
1,4-Dioxane	ND	10

Client ID: WB328
Site:

Lab Sample No: WB328
Lab Job No: J322

Date Sampled: _____
Date Received: _____
Date Extracted: 11/24/98
Date Analyzed: 12/01/98
GC Column: DB-5
Instrument ID: BNAMS4.i
Lab File ID: u5482.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 625

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. NO SEMI-VOLATILE ORGANIC COMPOUNDS FOUND			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
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30.			

TOTAL ESTIMATED CONCENTRATION

0.0

Data File: /chem/BNAMS4.i/625/11-09-98/01dec98.b/u5482.d
Report Date: 02-Dec-1998 09:19

Envirotech Research, Inc.

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS4.i/625/11-09-98/01dec98.b/u5482.d
Lab Smp Id: WB328 Client Smp ID: BNA
Inj Date : 01-DEC-1998 16:16
Operator : BNAMS 1 Inst ID: BNAMS4.i
Smp Info : WB328;1000;2;1;;
Misc Info : ;BNA;;
Comment :
Method : /chem/BNAMS4.i/625/11-09-98/01dec98.b/Bna625A.m
Meth Date : 01-Dec-1998 15:31 ctp Quant Type: ISTD
Cal Date : 09-NOV-1998 14:23 Cal File: u5076.d
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

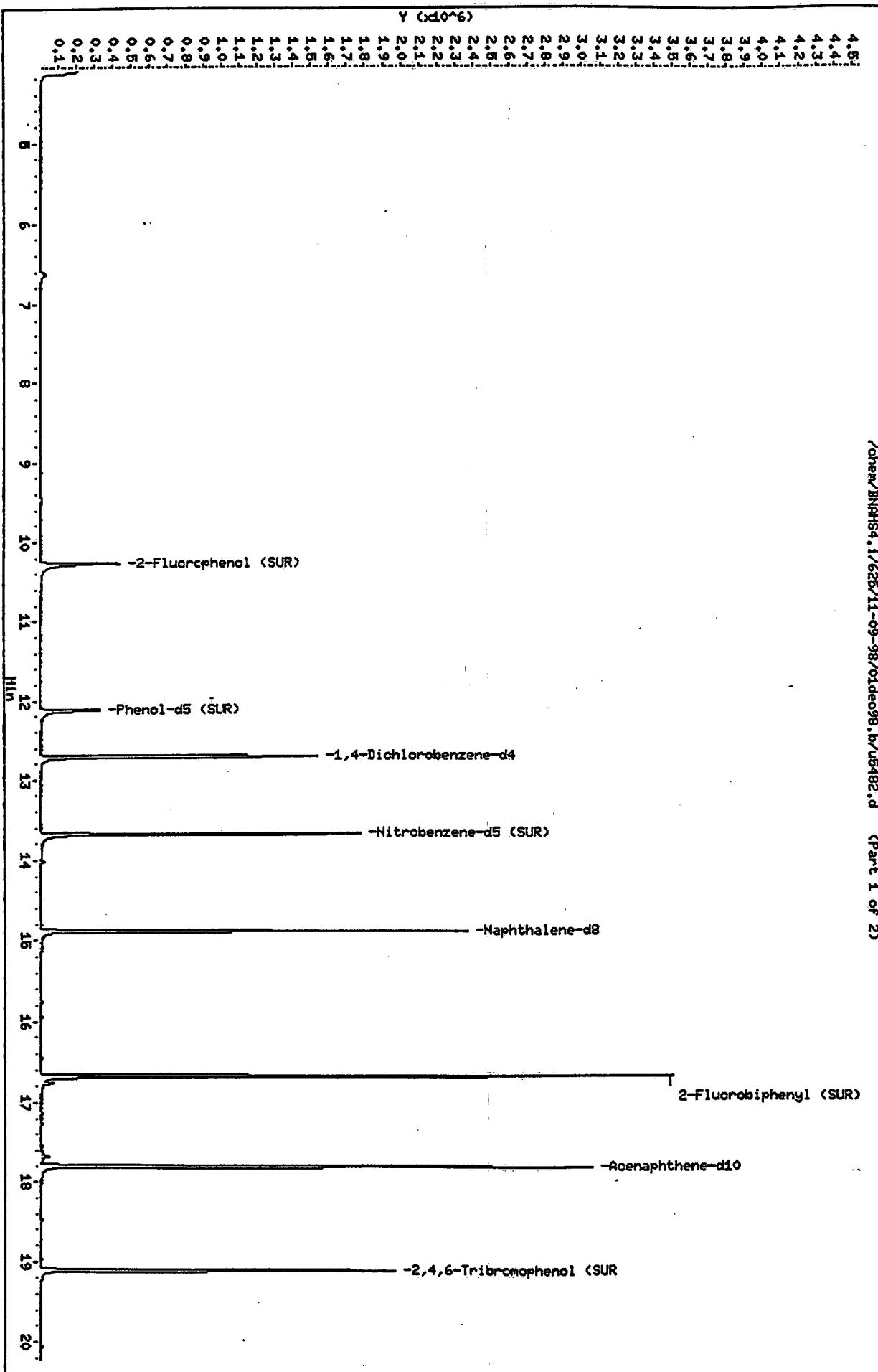
Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
\$ 16 2-Fluorophenol (SUR)	112	10.270	10.282 (0.808)	198257	17.9821	36		
\$ 17 Phenol-d5 (SUR)	99	12.124	12.137 (0.954)	170705	11.2826	22		
* 79 1,4-Dichlorobenzene-d4	152	12.714	12.723 (1.000)	348108	40.0000			
\$ 76 Nitrobenzene-d5 (SUR)	82	13.677	13.690 (0.919)	751837	46.1862	92		
* 80 Naphthalene-d8	136	14.888	14.902 (1.000)	1242682	40.0000			
\$ 77 2-Fluorobiphenyl (SUR)	172	16.682	16.692 (0.937)	1448898	47.4182	95		
* 82 Acenaphthene-d10	164	17.803	17.813 (1.000)	891582	40.0000			
\$ 18 2,4,6-Tribromophenol (SUR)	330	19.106	19.121 (1.073)	278766	49.0970	98		
* 83 Phenanthrene-d10	188	20.265	20.273 (1.000)	1636768	40.0000			
\$ 78 Terphenyl-d14 (SUR)	244	22.876	22.881 (0.929)	2038822	49.2973	98		
* 81 Chrysene-d12	240	24.625	24.643 (1.000)	1595335	40.0000			
* 84 Perylene-d12	264	27.854	27.879 (1.000)	1513396	40.0000			

Data File: /chem/BNAHS4.1/625/11-09-98/01dec98.b/u5482.d
Date : 01-DEC-1998 16:16
Client ID: BNA

Sample Info: WB328;1,000,21,1;
Purge Volume: 1000.0
Column phase: DB-5

Instrument: BNAHS4.1
Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS4.1/625/11-09-98/01dec98.b/u5482.d (Part 1 of 2)

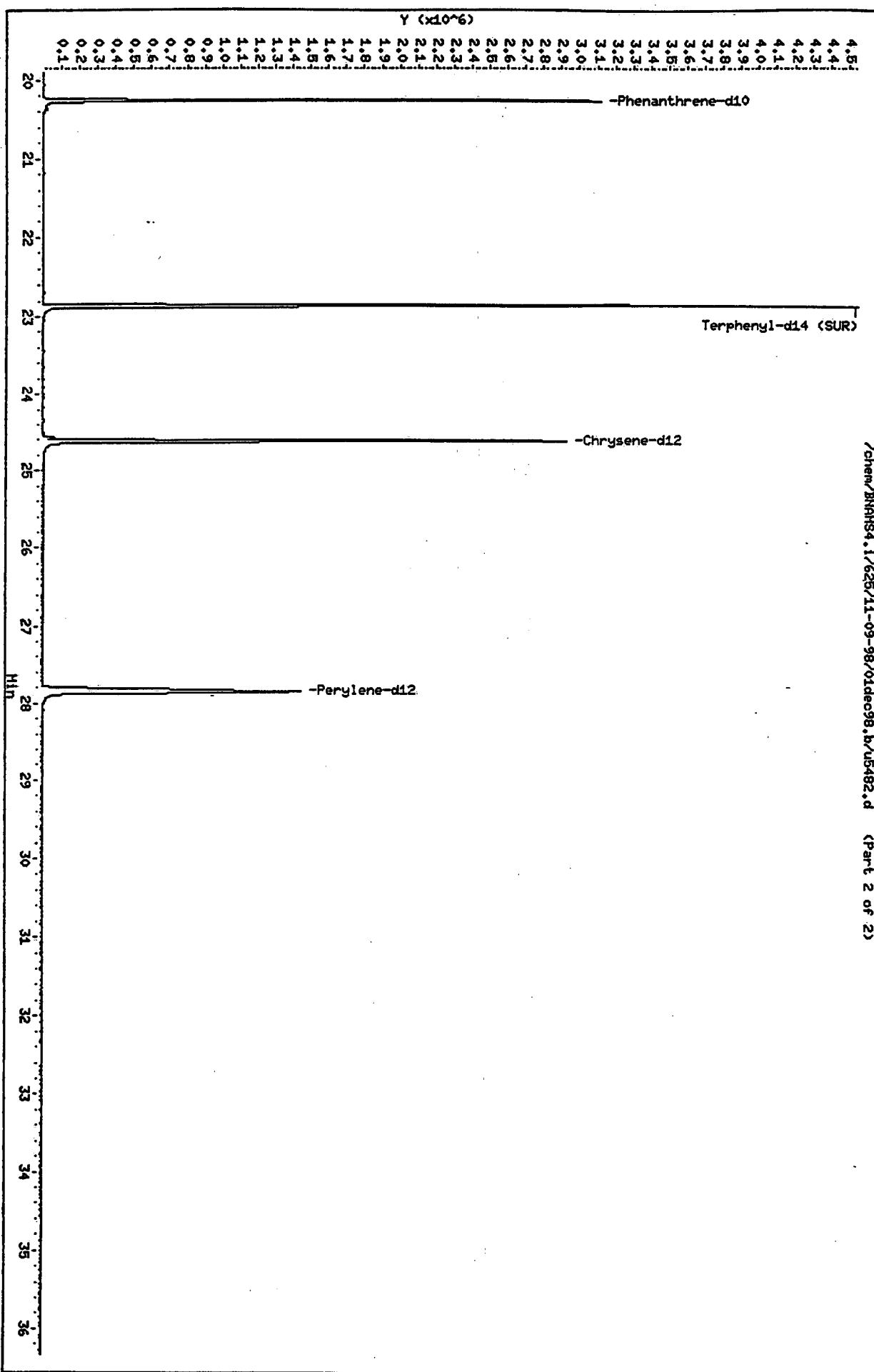


Data File: /chem/BNAHS4.1/625/11-09-98/01dec98.b/u5482.d
Date : 01-DEC-1998 16:16
Client ID: BNA

Sample Info: WB3281000;2;1;;
Purge Volume: 1000.0
Column phase: DB-5

Instrument: BNAHS4.i
Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS4.1/625/11-09-98/01dec98.b/u5482.d (Part 2 of 2)



SEMOVOLATILE ORGANICS INITIAL CALIBRATION DATA
METHOD 625

11/30/98 (b)

Instrument ID: BNAMS2

Calibration Date(s): 06/09/98 11/30/98

Calibration Time(s): 1028 1522

LAB FILE ID:	RRF10: S9183 RRF80: S9181	RRF20: S9182 RRF120: S9180	RRF50: S9178		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol	2.586	2.592	2.528	2.540	2.544
2-Chlorophenol	1.354	1.329	1.335	1.357	1.363
2-Methylphenol	1.550	1.528	1.515	1.523	1.515
4-Methylphenol	1.553	1.566	1.630	1.670	1.712
2-Nitrophenol	0.243	0.256	0.247	0.251	0.246
2,4-Dimethylphenol	0.355	0.345	0.351	0.356	0.356
2,4-Dichlorophenol	0.342	0.365	0.370	0.373	0.394
4-Chloro-3-methylphenol	0.522	0.549	0.547	0.524	0.531
2,4,6-Trichlorophenol	0.444	0.456	0.496	0.520	0.522
2,4,5-Trichlorophenol	0.472	0.472	0.509	0.534	0.548
2,4-Dinitrophenol	0.254	0.316	0.342	0.350	0.353
4-Nitrophenol	0.500	0.526	0.524	0.535	0.536
4,6-Dinitro-2-methylphenol	0.206	0.223	0.242	0.244	0.235
Pentachlorophenol	0.154	0.185	0.217	0.212	0.221
Benzoic Acid	0.177	0.218	0.246	0.236	0.269
N-Nitrosodimethylamine	1.196	1.238	1.241	1.178	1.214
bis(2-Chloroethyl)ether	1.807	1.704	1.676	1.646	1.622
1,3-Dichlorobenzene	1.564	1.503	1.526	1.560	1.640
1,4-Dichlorobenzene	1.520	1.507	1.502	1.546	1.628
1,2-Dichlorobenzene	1.564	1.487	1.482	1.524	1.658
bis(2-chloroisopropyl)ether	2.604	2.609	2.482	2.342	2.257
N-Nitroso-di-n-propylamine	1.837	1.777	1.645	1.619	1.594
Hexachloroethane	0.812	0.822	0.813	0.807	0.814
Nitrobenzene	0.976	0.997	0.930	0.896	0.880
Isophorone	1.384	1.421	1.400	1.351	1.290
bis(2-Chloroethoxy)methane	0.578	0.565	0.555	0.545	0.542
1,2,4-Trichlorobenzene	0.406	0.416	0.435	0.438	0.467
Naphthalene	1.012	1.013	1.046	1.091	1.172
4-Chloroaniline	0.463	0.465	0.475	0.494	0.496
Hexachlorobutadiene	0.365	0.361	0.375	0.370	0.376
2-Methylnaphthalene	0.714	0.710	0.734	0.756	0.826
Hexachlorocyclopentadiene	0.158	0.209	0.278	0.300	0.318
2-Chloronaphthalene	1.090	1.078	1.144	1.187	1.242
2-Nitroaniline	0.821	0.739	0.690	0.652	0.623
Dimethylphthalate	1.697	1.699	1.748	1.793	1.833
Acenaphthylene	1.622	1.640	1.716	1.794	1.882
2,6-Dinitrotoluene	0.366	0.385	0.392	0.403	0.404
3-Nitroaniline	0.340	0.355	0.358	0.358	0.361
Acenaphthene	1.136	1.166	1.261	1.317	1.401

SEMOVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

11/30/98 (b)

Instrument ID: BNAMS2

Calibration Date(s) : 06/09/98 11/30/98

Calibration Time(s) : 1028 1522

LAB FILE ID:	RRF10: S9183 RRF80: S9181	RRF20: S9182 RRF120: S9180	RRF50: S9178		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Dibenzofuran	1.673	1.658	1.783	1.906	2.046
2,4-Dinitrotoluene	0.519	0.543	0.557	0.575	0.625
Diethylphthalate	1.970	2.023	2.011	2.085	2.106
4-Chlorophenyl-phenylether	0.786	0.818	0.896	0.917	0.928
Fluorene	1.279	1.334	1.503	1.601	1.693
4-Nitroaniline	0.394	0.405	0.407	0.375	0.380
N-Nitrosodiphenylamine	0.523	0.538	0.580	0.589	0.625
4-Bromophenyl-phenylether	0.272	0.275	0.291	0.302	0.310
Hexachlorobenzene	0.299	0.312	0.338	0.348	0.364
Phenanthrene	1.039	1.046	1.151	1.216	1.270
Anthracene	1.111	1.132	1.230	1.273	1.330
Carbazole	0.996	1.021	1.072	1.126	1.165
Di-n-butylphthalate	1.741	1.758	1.804	1.807	1.840
Fluoranthene	1.415	1.460	1.542	1.578	1.597
Pyrene	1.374	1.400	1.448	1.454	1.463
Benzidine	0.732	0.798	0.699	0.652	0.563
Butylbenzylphthalate	0.844	0.843	0.834	0.826	0.819
3,3'-Dichlorobenzidine	0.541	0.579	0.576	0.598	0.574
Benzo(a)anthracene	1.347	1.337	1.375	1.407	1.388
Chrysene	1.197	1.230	1.273	1.227	1.228
bis(2-Ethylhexyl)phthalate	1.131	1.147	1.208	1.224	1.163
Di-n-octylphthalate	2.036	2.093	2.130	2.269	2.389
Benzo(b)fluoranthene	1.321	1.396	1.471	1.608	1.775
Benzo(k)fluoranthene	1.475	1.530	1.608	1.706	1.693
Benzo(a)pyrene	1.225	1.283	1.347	1.396	1.434
Indeno(1,2,3-cd)pyrene	1.173	1.182	1.245	1.253	1.296
Dibenz(a,h)anthracene	1.181	1.220	1.268	1.294	1.280
Benzo(g,h,i)perylene	1.165	1.216	1.215	1.196	1.132
Pyridine	1.671	1.652	1.658	1.664	1.719
Aniline	2.760	2.737	2.722	2.717	2.725
Benzyl Alcohol	1.140	1.140	1.183	1.175	1.212
1,2-Diphenylhydrazine	1.350	1.293	1.228	1.171	1.120
Diphenyl	1.402	1.428	1.560	1.669	1.766
Diphenyl Ether	0.801	0.809	0.844	0.891	0.933
Acetophenone	2.711	2.675	2.682	2.706	2.647
N,N-Dimethylaniline	2.380	2.341	2.376	2.480	2.488
1,4-Dioxane					
2-Fluorophenol (SUR)	1.462	1.493	1.539	1.542	1.578

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

11/30/98 (pp)

Instrument ID: BNAMS2

Calibration Date(s): 06/09/98 11/30/98

Calibration Time(s): 1028 1522

LAB FILE ID:	RRF10: S9183 RRF80: S9181	RRF20: S9182 RRF120: S9180	RRF50: S9178		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol-d5 (SUR)	2.212	2.276	2.199	2.229	2.245
2,4,6-Tribromophenol (SUR)	0.304	0.324	0.358	0.378	0.401
Nitrobenzene-d5 (SUR)	0.762	0.758	0.752	0.731	0.731
2-Fluorobiphenyl (SUR)	1.349	1.359	1.478	1.552	1.581
Terphenyl-d14 (SUR)	1.065	1.078	1.142	1.137	1.109

SEMOVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

11/30/98
(BP)

Instrument ID: BNAMS2

Calibration Date(s): 06/09/98 11/30/98

Calibration Time(s): 1028 1522

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Phenol	AVRG	2.55790155	1.1*
2-Chlorophenol	AVRG	1.34760684	1.1*
2-Methylphenol	AVRG	1.52643164	0.9*
4-Methylphenol	AVRG	1.62612894	4.2*
2-Nitrophenol	AVRG	0.24851926	2.0*
2,4-Dimethylphenol	AVRG	0.35250582	1.4*
2,4-Dichlorophenol	AVRG	0.36884235	5.1*
4-Chloro-3-methylphenol	AVRG	0.53453905	2.4*
2,4,6-Trichlorophenol	AVRG	0.48757173	7.4*
2,4,5-Trichlorophenol	AVRG	0.50696634	6.9*
2,4-Dinitrophenol	AVRG	0.32306745	12.8**
4-Nitrophenol	AVRG	0.52397336	2.8**
4,6-Dinitro-2-methylphenol	AVRG	0.23025184	6.8*
Pentachlorophenol	AVRG	0.19803928	14.2*
Benzoic Acid	AVRG	0.22915252	15.0*
N-Nitrosodimethylamine	AVRG	1.21345858	2.2*
bis(2-Chloroethyl)ether	AVRG	1.69124740	4.2*
1,3-Dichlorobenzene	AVRG	1.55862938	3.3*
1,4-Dichlorobenzene	AVRG	1.54067837	3.4*
1,2-Dichlorobenzene	AVRG	1.54303567	4.7*
bis(2-chloroisopropyl)ether	AVRG	2.45879688	6.4*
N-Nitroso-di-n-propylamine	AVRG	1.69429453	6.3**
Hexachloroethane	AVRG	0.81367644	0.7*
Nitrobenzene	AVRG	0.93574835	5.4*
Isophorone	AVRG	1.36920645	3.7*
bis(2-Chloroethoxy)methane	AVRG	0.55696113	2.7*
1,2,4-Trichlorobenzene	AVRG	0.43247654	5.4*
Naphthalene	AVRG	1.06684406	6.3*
4-Chloroaniline	AVRG	0.47859185	3.2*
Hexachlorobutadiene	AVRG	0.36961599	1.8*
2-Methylnaphthalene	AVRG	0.74785482	6.3*
Hexachlorocyclopentadiene	AVRG	0.25269138	26.6**
2-Chloronaphthalene	AVRG	1.14813269	6.0*
2-Nitroaniline	AVRG	0.70483136	11.1*
Dimethylphthalate	AVRG	1.75430563	3.4*
Acenaphthylene	AVRG	1.73085558	6.3*
2,6-Dinitrotoluene	AVRG	0.38982497	4.0*
3-Nitroaniline	AVRG	0.35452193	2.4*
Acenaphthene	AVRG	1.25627153	8.6*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

1/30/98 (BP)

Instrument ID: BNAMS2

Calibration Date(s) : 06/09/98 11/30/98

Calibration Time(s) : 1028 1522

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Phenol-d5 (SUR)	AVRG	2.23246785	1.3*
2,4,6-Tribromophenol (SUR)	AVRG	0.35311896	11.1*
Nitrobenzene-d5 (SUR)	AVRG	0.74665642	2.0*
2-Fluorobiphenyl (SUR)	AVRG	1.46375201	7.3*
Terphenyl-d14 (SUR)	AVRG	1.10615860	3.1*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMOVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

1/30/96 (BP)

Instrument ID: BNAMS2

Calibration Date(s) : 06/09/98 11/30/98

Calibration Time(s) : 1028 1522

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R ²
Dibenzofuran	AVRG	1.81306855	9.0*
2,4-Dinitrotoluene	AVRG	0.56395211	7.1*
Diethylphthalate	AVRG	2.03899059	2.7*
4-Chlorophenyl-phenylether	AVRG	0.86908938	7.3*
Fluorene	AVRG	1.48208245	11.8*
4-Nitroaniline	AVRG	0.39216960	3.6*
N-Nitrosodiphenylamine	AVRG	0.57090278	7.2*
4-Bromophenyl-phenylether	AVRG	0.28995770	5.7*
Hexachlorobenzene	AVRG	0.33210941	8.0*
Phenanthrene	AVRG	1.14433636	8.9*
Anthracene	AVRG	1.21520011	7.6*
Carbazole	AVRG	1.07598670	6.6*
Di-n-butylphthalate	AVRG	1.79021234	2.2*
Fluoranthene	AVRG	1.51841588	5.1*
Pyrene	AVRG	1.42769473	2.7*
Benzidine	AVRG	0.68878940	12.8*
Butylbenzylphthalate	AVRG	0.83349596	1.3*
3,3'-Dichlorobenzidine	AVRG	0.57384445	3.6*
Benzo(a)anthracene	AVRG	1.37091102	2.1*
Chrysene	AVRG	1.23102753	2.2*
bis(2-Ethylhexyl)phthalate	AVRG	1.17464552	3.4*
Di-n-octylphthalate	AVRG	2.18342059	6.6*
Benzo(b)fluoranthene	AVRG	1.51427866	11.9*
Benzo(k)fluoranthene	AVRG	1.60258926	6.3*
Benzo(a)pyrene	AVRG	1.33713631	6.3*
Indeno(1,2,3-cd)pyrene	AVRG	1.23011398	4.2*
Dibenz(a,h)anthracene	AVRG	1.24879979	3.8*
Benzo(g,h,i)perylene	AVRG	1.18491892	3.0*
Pyridine	AVRG	1.67260541	1.6*
Aniline	AVRG	2.73217287	0.6*
Benzyl Alcohol	AVRG	1.17005678	2.6*
1,2-Diphenylhydrazine	AVRG	1.23245703	7.5*
Diphenyl	AVRG	1.56478156	9.9**
Diphenyl Ether	AVRG	0.85579533	6.6**
Acetophenone	AVRG	2.68436480	1.0**
N,N-Dimethylaniline	AVRG	2.41315573	2.8**
1,4-Dioxane	AVRG		
2-Fluorophenol (SUR)	AVRG	1.52286351	3.0*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMOVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS2 Calibration Date: 12/02/98 Time: 0919
 Lab File ID: S9240 Init. Calib. Date(s): 06/09/98 11/30/98
 Init. Calib. Times: 1028 1522

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
3-Nitroaniline	0.354	0.360		-1.5	
Acenaphthene	1.256	1.245		0.9	20.0
Dibenzo-furan	1.813	1.772		2.3	
2,4-Dinitrotoluene	0.564	0.540		4.2	20.0
Diethylphthalate	2.039	1.937		5.0	20.0
4-Chlorophenyl-phenylether	0.869	0.845		2.8	20.0
Fluorene	1.482	1.471		0.7	20.0
4-Nitroaniline	0.392	0.383		2.3	
N-Nitrosodiphenylamine	0.571	0.578		-1.2	20.0
4-Bromophenyl-phenylether	0.290	0.284		2.1	20.0
Hexachlorobenzene	0.332	0.331		0.3	20.0
Phenanthrene	1.144	1.149		-0.0	20.0
Anthracene	1.215	1.223		0.1	20.0
Carbazole	1.076	1.085		0.1	
Di-n-butylphthalate	1.790	1.747		2.4	20.0
Fluoranthene	1.518	1.476		2.8	20.0
Pyrene	1.428	1.438		0.1	20.0
Benzidine	0.689	0.640		7.1	
Butylbenzylphthalate	0.833	0.840		0.1	20.0
3,3'-Dichlorobenzidine	0.574	0.573		0.2	20.0
Benzo(a)anthracene	1.371	1.374		-0.0	20.0
Chrysene	1.231	1.256		-2.0	20.0
bis(2-Ethylhexyl)phthalate	1.175	1.191		-1.2	20.0
Di-n-octylphthalate	2.183	2.159		1.1	20.0
Benzo(b)fluoranthene	1.514	1.462		3.4	20.0
Benzo(k)fluoranthene	1.602	1.600		0.1	20.0
Benzo(a)pyrene	1.337	1.328		0.7	20.0
Indeno(1,2,3-cd)pyrene	1.230	1.240		0.1	20.0
Dibenz(a,h)anthracene	1.249	1.279		-2.4	20.0
Benzo(g,h,i)perylene	1.185	1.179		0.5	20.0
Pyridine	1.673	1.755		-4.9	
Aniline	2.732	2.834		-3.7	
Benzyl Alcohol	1.170	1.224		-4.6	
1,2-Diphenylhydrazine	1.232	1.178	0.001	4.4	
Diphenyl	1.565	1.537	0.001	1.8	20.0
Diphenyl Ether	0.856	0.844	0.001	1.4	20.0
Acetophenone	2.684	2.765	0.001	-3.0	20.0

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS2

Calibration Date: 12/02/98 Time: 0919

11/30/98 AM

Lab File ID: S9240

Init. Calib. Date(s): 06/09/98 11/30/98

Init. Calib. Times: 1028 1522

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
N,N-Dimethylaniline	2.413	2.446	0.001	-1.2	20.0
1,4-Dioxane			0.001		20.0
2-Fluorophenol (SUR)	1.523	1.630		-7.0	
Phenol-d5 (SUR)	2.232	2.330		-4.2	
2,4,6-Tribromophenol (SUR)	0.353	0.342		3.1	20.0
Nitrobenzene-d5 (SUR)	0.747	0.713		4.6	
2-Fluorobiphenyl (SUR)	1.464	1.430		2.3	
Terphenyl-d14 (SUR)	1.106	1.132		-2.2	

SEMOVOLATILE ORGANICS CONTINUING CALIBRATION CHECK
METHOD 625

Instrument ID: BNAMS2

Calibration Date: 12/03/98 Time: 0932

11/30/98 AD

Lab File ID: S9273

Init. Calib. Date(s): 06/09/98 11/30/98

Init. Calib. Times: 1028 1522

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	2.558	2.612		-2.1	20.0
2-Chlorophenol	1.348	1.352		-0.0	20.0
2-Methylphenol	1.526	1.562		-2.2	
4-Methylphenol	1.626	1.676		-2.9	
2-Nitrophenol	0.249	0.247		0.8	20.0
2,4-Dimethylphenol	0.353	0.354		-0.0	20.0
2,4-Dichlorophenol	0.369	0.365		1.1	20.0
4-Chloro-3-methylphenol	0.535	0.536		-0.0	20.0
2,4,6-Trichlorophenol	0.488	0.478		2.0	20.0
2,4,5-Trichlorophenol	0.507	0.488		3.7	
2,4-Dinitrophenol	0.323	0.317	0.05	1.8	20.0
4-Nitrophenol	0.524	0.475	0.05	9.4	20.0
4,6-Dinitro-2-methylphenol	0.230	0.226		1.7	20.0
Pentachlorophenol	0.198	0.199		-0.0	20.0
Benzoic Acid	0.229	0.219		4.4	
N-Nitrosodimethylamine	1.213	1.373		-13.0	20.0
bis(2-Chloroethyl)ether	1.691	1.755		-3.6	20.0
1,3-Dichlorobenzene	1.559	1.536		1.5	20.0
1,4-Dichlorobenzene	1.541	1.506		2.3	20.0
1,2-Dichlorobenzene	1.543	1.475		4.4	20.0
bis(2-chloroisopropyl)ether	2.459	2.518		-2.2	20.0
N-Nitroso-di-n-propylamine	1.694	1.618	0.5	4.5	20.0
Hexachloroethane	0.814	0.793		2.6	20.0
Nitrobenzene	0.936	0.878		6.2	20.0
Isophorone	1.369	1.349		1.5	20.0
bis(2-Chloroethoxy)methane	0.557	0.568		-1.8	20.0
1,2,4-Trichlorobenzene	0.432	0.426		1.4	20.0
Naphthalene	1.067	1.059		0.7	20.0
4-Chloroaniline	0.479	0.493		-2.9	
Hexachlorobutadiene	0.369	0.341		7.6	20.0
2-Methylnaphthalene	0.748	0.739		1.2	
Hexachlorocyclopentadiene	0.253	0.238	0.05	5.9	20.0
2-Chloronaphthalene	1.148	1.117		2.7	20.0
2-Nitroaniline	0.705	0.618		12.3	
Dimethylphthalate	1.754	1.689		3.7	20.0
Acenaphthylene	1.731	1.695		2.1	20.0
2,6-Dinitrotoluene	0.390	0.384		1.5	20.0

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS2

Calibration Date: 12/03/98 Time: 0932

1/30/98 (30)

Lab File ID: S9273

Init. Calib. Date(s): 06/09/98 11/30/98

Init. Calib. Times: 1028 1522

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
3-Nitroaniline	0.354	0.346		2.2	
Acenaphthene	1.256	1.257		-0.0	20.0
Dibenzo furan	1.813	1.738		4.1	
2,4-Dinitrotoluene	0.564	0.533		5.5	20.0
Diethylphthalate	2.039	1.922		5.7	20.0
4-Chlorophenyl-phenylether	0.869	0.844		2.9	20.0
Fluorene	1.482	1.462		1.3	20.0
4-Nitroaniline	0.392	0.371		5.4	
N-Nitrosodiphenylamine	0.571	0.565		1.0	20.0
4-Bromophenyl-phenylether	0.290	0.285		1.7	20.0
Hexachlorobenzene	0.332	0.322		3.0	20.0
Phenanthrene	1.144	1.150		-0.0	20.0
Anthracene	1.215	1.201		1.2	20.0
Carbazole	1.076	1.083		0.1	
Di-n-butylphthalate	1.790	1.728		3.5	20.0
Fluoranthene	1.518	1.491		1.8	20.0
Pyrene	1.428	1.491		-4.4	20.0
Benzidine	0.689	0.580		15.8	
Butylbenzylphthalate	0.833	0.844		-1.3	20.0
3,3'-Dichlorobenzidine	0.574	0.580		-1.0	20.0
Benzo(a)anthracene	1.371	1.418		-3.4	20.0
Chrysene	1.231	1.278		-3.8	20.0
bis(2-Ethylhexyl)phthalate	1.175	1.206		-2.6	20.0
Di-n-octylphthalate	2.183	2.209		-1.0	20.0
Benzo(b)fluoranthene	1.514	1.457		3.8	20.0
Benzo(k)fluoranthene	1.602	1.668		-4.1	20.0
Benzo(a)pyrene	1.337	1.370		-2.3	20.0
Indeno(1,2,3-cd)pyrene	1.230	1.203		2.2	20.0
Dibenz(a,h)anthracene	1.249	1.222		2.2	20.0
Benzo(g,h,i)perylene	1.185	1.106		6.7	20.0
Pyridine	1.673	1.849		-10.5	
Aniline	2.732	2.736		-0.0	
Benzyl Alcohol	1.170	1.234		-5.3	
1,2-Diphenylhydrazine	1.232	1.179		4.3	
Diphenyl	1.565	1.555	0.001	0.6	20.0
Diphenyl Ether	0.856	0.839	0.001	2.0	20.0
Acetophenone	2.684	2.683	0.001	0.0	20.0

SEMOVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS2 Calibration Date: 12/03/98 Time: 0932
 Lab File ID: S9273 Init. Calib. Date(s): 06/09/98 *6/30/98* 11/30/98
 Init. Calib. Times: 1028 1522

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
N,N-Dimethylaniline	2.413	2.382	0.001	1.3	20.0
1,4-Dioxane			0.001		20.0
2-Fluorophenol (SUR)	1.523	1.607		-5.5	
Phenol-d5 (SUR)	2.232	2.276		-1.8	
2,4,6-Tribromophenol (SUR)	0.353	0.337		4.5	20.0
Nitrobenzene-d5 (SUR)	0.747	0.710		5.0	
2-Fluorobiphenyl (SUR)	1.464	1.432		2.2	
Terphenyl-d14 (SUR)	1.106	1.142		-3.2	

SEMVOLATILE ORGANICS INITIAL CALIBRATION DATA
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s): 11/09/98 11/09/98

Calibration Time(s): 0948 1423

LAB FILE ID:	RRF10: U5076 RRF80: U5072	RRF20: U5073 RRF120: U5071	RRF50: U5070		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol	1.834	1.940	1.949	1.970	1.930
2-Chlorophenol	1.258	1.336	1.365	1.348	1.329
2-Methylphenol	1.172	1.176	1.220	1.242	1.211
4-Methylphenol	1.140	1.229	1.241	1.242	1.187
2-Nitrophenol	0.214	0.249	0.251	0.244	0.246
2,4-Dimethylphenol	0.328	0.345	0.343	0.354	0.353
2,4-Dichlorophenol	0.342	0.371	0.377	0.385	0.389
4-Chloro-3-methylphenol	0.393	0.415	0.413	0.403	0.409
2,4,6-Trichlorophenol	0.420	0.446	0.472	0.452	0.488
2,4,5-Trichlorophenol	0.437	0.470	0.487	0.489	0.493
2,4-Dinitrophenol	0.179	0.268	0.302	0.317	0.320
4-Nitrophenol	0.304	0.345	0.369	0.362	0.376
4,6-Dinitro-2-methylphenol	0.180	0.215	0.214	0.218	0.218
Pentachlorophenol	0.133	0.164	0.171	0.173	0.170
Benzoic Acid	0.091	0.188	0.223	0.262	0.259
N-Nitrosodimethylamine	0.685	0.831	1.000	0.972	0.952
bis(2-Chloroethyl)ether	1.168	1.253	1.271	1.227	1.185
1,3-Dichlorobenzene	1.565	1.554	1.620	1.541	1.552
1,4-Dichlorobenzene	1.572	1.524	1.562	1.524	1.544
1,2-Dichlorobenzene	1.526	1.514	1.550	1.503	1.530
bis(2-chloroisopropyl)ether	2.158	2.043	2.058	1.970	1.862
N-Nitroso-di-n-propylamine	1.253	1.246	1.199	1.128	1.065
Hexachloroethane	0.593	0.614	0.606	0.603	0.600
Nitrobenzene	0.730	0.739	0.714	0.700	0.691
Isophorone	1.037	1.082	1.032	1.024	1.027
bis(2-Chloroethoxy)methane	0.423	0.436	0.424	0.419	0.433
1,2,4-Trichlorobenzene	0.416	0.434	0.423	0.422	0.427
Naphthalene	1.079	1.082	1.046	1.042	1.070
4-Chloroaniline	0.413	0.445	0.454	0.446	0.456
Hexachlorobutadiene	0.261	0.271	0.266	0.262	0.247
2-Methylnaphthalene	0.705	0.721	0.698	0.724	0.731
Hexachlorocyclopentadiene	0.099	0.141	0.202	0.208	0.234
2-Chloronaphthalene	1.125	1.145	1.127	1.148	1.152
2-Nitroaniline	0.475	0.480	0.508	0.488	0.471
Dimethylphthalate	1.658	1.646	1.614	1.605	1.633
Acenaphthylene	1.750	1.729	1.727	1.732	1.737
2,6-Dinitrotoluene	0.351	0.376	0.389	0.385	0.386
3-Nitroaniline	0.290	0.314	0.337	0.331	0.350
Acenaphthene	1.215	1.189	1.221	1.209	1.228

SEMOVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s): 11/09/98 11/09/98

Calibration Time(s): 0948 1423

LAB FILE ID:	RRF10: U5076 RRF80: U5072	RRF20: U5073 RRF120: U5071	RRF50: U5070		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Dibenzofuran	1.746	1.663	1.753	1.690	1.727
2,4-Dinitrotoluene	0.514	0.498	0.528	0.516	0.525
Diethylphthalate	1.786	1.793	1.754	1.676	1.710
4-Chlorophenyl-phenylether	0.692	0.691	0.716	0.661	0.643
Fluorene	1.377	1.350	1.402	1.364	1.357
4-Nitroaniline	0.299	0.309	0.330	0.336	0.353
N-Nitrosodiphenylamine	0.531	0.559	0.544	0.554	0.528
4-Bromophenyl-phenylether	0.240	0.246	0.244	0.236	0.230
Hexachlorobenzene	0.292	0.308	0.307	0.292	0.286
Phenanthrene	1.096	1.155	1.108	1.117	1.087
Anthracene	1.187	1.195	1.186	1.207	1.106
Carbazole	1.084	1.111	1.079	1.089	1.037
Di-n-butylphthalate	1.702	1.743	1.645	1.640	1.566
Fluoranthene	1.346	1.347	1.328	1.270	1.219
Pyrene	1.438	1.490	1.466	1.470	1.451
Benzidine	0.485	0.578	0.478	0.491	0.430
Butylbenzylphthalate	0.894	0.923	0.898	0.888	0.886
3,3'-Dichlorobenzidine	0.514	0.553	0.518	0.506	0.474
Benzo(a)anthracene	1.293	1.300	1.285	1.262	1.224
Chrysene	1.237	1.292	1.231	1.213	1.211
bis(2-Ethylhexyl)phthalate	1.282	1.289	1.237	1.204	1.117
Di-n-octylphthalate	2.163	2.214	2.178	2.188	2.167
Benzo(b)fluoranthene	1.186	1.278	1.312	1.441	1.557
Benzo(k)fluoranthene	1.480	1.462	1.556	1.378	1.250
Benzo(a)pyrene	1.198	1.252	1.251	1.270	1.269
Indeno(1,2,3-cd)pyrene	1.092	1.206	1.265	1.390	1.471
Dibenz(a,h)anthracene	1.178	1.248	1.236	1.328	1.294
Benzo(g,h,i)perylene	1.184	1.261	1.258	1.303	1.327
Pyridine	0.993	1.156	1.367	1.326	1.292
Aniline	1.851	2.023	2.049	2.070	2.046
Benzyl Alcohol	0.874	0.902	0.942	0.951	0.948
1,2-Diphenylhydrazine	1.018	1.040	0.982	0.930	0.878
Diphenyl	1.469	1.512	1.539	1.431	1.531
Diphenyl Ether	0.802	0.778	0.823	0.798	0.823
Acetophenone	2.055	2.052	2.024	2.023	1.959
N,N-Dimethylaniline	2.066	2.024	1.980	1.992	1.988
1,4-Dioxane	0.454	0.483	0.559	0.502	0.516
2-Fluorophenol (SUR)	1.046	1.226	1.355	1.314	1.393

SEMVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s) : 11/09/98 11/09/98

Calibration Time(s) : 0948 1423

LAB FILE ID:	RRF10: U5076 RRF80: U5072	RRF20: U5073 RRF120: U5071	RRF50: U5070		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol-d5 (SUR)	1.631	1.726	1.766	1.811	1.759
2,4,6-Tribromophenol (SUR)	0.232	0.247	0.265	0.265	0.264
Nitrobenzene-d5 (SUR)	0.507	0.528	0.540	0.523	0.521
2-Fluorobiphenyl (SUR)	1.380	1.405	1.355	1.347	1.368
Terphenyl-d14 (SUR)	1.086	1.068	1.048	1.009	0.974

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s) : 11/09/98 11/09/98

Calibration Time(s) : 0948 1423

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Phenol	AVRG	1.92475042	2.7*
2-Chlorophenol	AVRG	1.32738153	3.1*
2-Methylphenol	AVRG	1.20432227	2.5*
4-Methylphenol	AVRG	1.20779321	3.6*
2-Nitrophenol	AVRG	0.24093064	6.2*
2,4-Dimethylphenol	AVRG	0.34477589	3.0*
2,4-Dichlorophenol	AVRG	0.37286880	5.0*
4-Chloro-3-methylphenol	AVRG	0.40661116	2.2*
2,4,6-Trichlorophenol	AVRG	0.45544819	5.7*
2,4,5-Trichlorophenol	AVRG	0.47527858	4.9*
2,4-Dinitrophenol	AVRG	0.27715368	21.1**
4-Nitrophenol	AVRG	0.35134272	8.2**
4,6-Dinitro-2-methylphenol	AVRG	0.20894450	7.7*
Pentachlorophenol	AVRG	0.16235362	10.3*
Benzoic Acid	AVRG	0.20474234	34.4*
N-Nitrosodimethylamine	AVRG	0.88815283	14.7*
bis(2-Chloroethyl)ether	AVRG	1.22082536	3.6*
1,3-Dichlorobenzene	AVRG	1.56655997	2.0*
1,4-Dichlorobenzene	AVRG	1.54534095	1.4*
1,2-Dichlorobenzene	AVRG	1.52485084	1.2*
bis(2-chloroisopropyl)ether	AVRG	2.01839729	5.4**
N-Nitroso-di-n-propylamine	AVRG	1.17842671	6.8**
Hexachloroethane	AVRG	0.60317239	1.3*
Nitrobenzene	AVRG	0.71501022	2.8*
Isophorone	AVRG	1.04063815	2.3*
bis(2-Chloroethoxy)methane	AVRG	0.42715829	1.7*
1,2,4-Trichlorobenzene	AVRG	0.42419336	1.6*
Naphthalene	AVRG	1.06372938	1.8*
4-Chloroaniline	AVRG	0.44286646	3.9*
Hexachlorobutadiene	AVRG	0.26146328	3.4*
2-Methylnaphthalene	AVRG	0.71574738	1.9*
Hexachlorocyclopentadiene	AVRG	0.17701390	31.2**
2-Chloronaphthalene	AVRG	1.13939363	1.1*
2-Nitroaniline	AVRG	0.48450350	3.0*
Dimethylphthalate	AVRG	1.63098080	1.3*
Acenaphthylene	AVRG	1.73491994	0.5*
2,6-Dinitrotoluene	AVRG	0.37735114	4.1*
3-Nitroaniline	AVRG	0.32428122	7.2*
Acenaphthene	AVRG	1.21231934	1.2*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMITVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s) : 11/09/98 11/09/98

Calibration Time(s) : 0948 1423

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Dibenzofuran	AVRG	1.71573997	2.2*
2,4-Dinitrotoluene	AVRG	0.51615850	2.2*
Diethylphthalate	AVRG	1.74400952	2.9*
4-Chlorophenyl-phenylether	AVRG	0.68075590	4.2*
Fluorene	AVRG	1.37016169	1.5*
4-Nitroaniline	AVRG	0.32525747	6.6*
N-Nitrosodiphenylamine	AVRG	0.54314119	2.5*
4-Bromophenyl-phenylether	AVRG	0.23900731	2.7*
Hexachlorobenzene	AVRG	0.29715198	3.3*
Phenanthrene	AVRG	1.11256115	2.4*
Anthracene	AVRG	1.17629166	3.4*
Carbazole	AVRG	1.07990631	2.5*
Di-n-butylphthalate	AVRG	1.65938805	4.1*
Fluoranthene	AVRG	1.30222338	4.3*
Pyrene	AVRG	1.46290379	1.4*
Benzidine	AVRG	0.49254336	10.8*
Butylbenzylphthalate	AVRG	0.89769075	1.7*
3,3'-Dichlorobenzidine	AVRG	0.51302192	5.5*
Benzo(a)anthracene	AVRG	1.27275208	2.4*
Chrysene	AVRG	1.23678931	2.7*
bis(2-Ethylhexyl)phthalate	AVRG	1.22593293	5.7*
Di-n-octylphthalate	AVRG	2.18230963	0.9*
Benzo(b)fluoranthene	AVRG	1.35467575	10.7*
Benzo(k)fluoranthene	AVRG	1.42528821	8.2*
Benzo(a)pyrene	AVRG	1.24801385	2.4*
Indeno(1,2,3-cd)pyrene	AVRG	1.28493013	11.6*
Dibenz(a,h)anthracene	AVRG	1.25657672	4.6*
Benzo(g,h,i)perylene	AVRG	1.26647381	4.3*
Pyridine	AVRG	1.22688086	12.4*
Aniline	AVRG	2.00789145	4.4*
Benzyl Alcohol	AVRG	0.92337424	3.7*
1,2-Diphenylhydrazine	AVRG	0.96980413	6.8*
Diphenyl	AVRG	1.49639392	3.0**
Diphenyl Ether	AVRG	0.80478513	2.3**
Acetophenone	AVRG	2.02272041	1.9**
N,N-Dimethylaniline	AVRG	2.01006828	1.8**
1,4-Dioxane	AVRG	0.50306663	7.8**
2-Fluorophenol (SUR)	AVRG	1.26687323	10.9*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date(s) : 11/09/98 11/09/98

Calibration Time(s) : 0948 1423

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R ²
Phenol-d5 (SUR)	AVRG	1.73853541	3.9*
2,4,6-Tribromophenol (SUR)	AVRG	0.25473195	5.8*
Nitrobenzene-d5 (SUR)	AVRG	0.52397658	2.3*
2-Fluorobiphenyl (SUR)	AVRG	1.37085516	1.7*
Terphenyl-d14 (SUR)	AVRG	1.03696551	4.4*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK
METHOD 625

Instrument ID: BNAMS4

Calibration Date: 12/01/98 Time: 1148

Lab File ID: U5476

Init. Calib. Date(s): 11/09/98 11/09/98

Init. Calib. Times: 0948 1423

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.925	1.946		-0.9	20.0
2-Chlorophenol	1.327	1.243		6.3	20.0
2-Methylphenol	1.204	1.289		-7.0	
4-Methylphenol	1.208	1.348		-11.4	
2-Nitrophenol	0.241	0.237		1.6	20.0
2,4-Dimethylphenol	0.345	0.358		-3.6	20.0
2,4-Dichlorophenol	0.373	0.386		-3.3	20.0
4-Chloro-3-methylphenol	0.407	0.446		-9.4	20.0
2,4,6-Trichlorophenol	0.456	0.461		-0.9	20.0
2,4,5-Trichlorophenol	0.475	0.478		0.1	
2,4-Dinitrophenol	0.277	0.301	0.05	-8.5	20.0
4-Nitrophenol	0.351	0.348	0.05	0.8	20.0
4,6-Dinitro-2-methylphenol	0.209	0.211		0.1	20.0
Pentachlorophenol	0.162	0.158		2.5	20.0
Benzoic Acid	0.205	0.207		0.1	
N-Nitrosodimethylamine	0.888	0.759		14.5	20.0
bis(2-Chloroethyl)ether	1.221	1.202		1.6	20.0
1,3-Dichlorobenzene	1.566	1.528		2.4	20.0
1,4-Dichlorobenzene	1.545	1.557		0.1	20.0
1,2-Dichlorobenzene	1.525	1.543		-1.0	20.0
bis(2-chloroisopropyl)ether	2.018	1.768		12.4	20.0
N-Nitroso-di-n-propylamine	1.178	1.272	0.5	-7.8	20.0
Hexachloroethane	0.603	0.666		-10.4	20.0
Nitrobenzene	0.715	0.764		-6.8	20.0
Isophorone	1.040	1.024		1.5	20.0
bis(2-Chloroethoxy)methane	0.427	0.430		0.1	20.0
1,2,4-Trichlorobenzene	0.424	0.441		-4.0	20.0
Naphthalene	1.064	1.084		-1.7	20.0
4-Chloroaniline	0.443	0.455		-2.7	
Hexachlorobutadiene	0.261	0.281		-7.5	20.0
2-Methylnaphthalene	0.716	0.734		-2.5	
Hexachlorocyclopentadiene	0.177	0.172	0.05	2.8	20.0
2-Chloronaphthalene	1.139	1.148		0.1	20.0
2-Nitroaniline	0.484	0.498		-2.7	
Dimethylphthalate	1.631	1.580		3.1	20.0
Acenaphthylene	1.735	1.745		-0.0	20.0
2,6-Dinitrotoluene	0.377	0.375		0.5	20.0

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS4 Calibration Date: 12/01/98 Time: 1148
 Lab File ID: U5476 Init. Calib. Date(s): 11/09/98 11/09/98
 Init. Calib. Times: 0948 1423

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
3-Nitroaniline	0.324	0.320		1.2	
Acenaphthene	1.212	1.252		-3.3	20.0
Dibenzofuran	1.716	1.802		-5.0	
2,4-Dinitrotoluene	0.516	0.520		0.1	20.0
Diethylphthalate	1.744	1.782		-2.0	20.0
4-Chlorophenyl-phenylether	0.681	0.724		-6.3	20.0
Fluorene	1.370	1.470		-7.1	20.0
4-Nitroaniline	0.325	0.329		-1.2	
N-Nitrosodiphenylamine	0.543	0.549		-1.1	20.0
4-Bromophenyl-phenylether	0.239	0.239		0.0	20.0
Hexachlorobenzene	0.297	0.293		1.3	20.0
Phenanthrene	1.113	1.103		0.9	20.0
Anthracene	1.176	1.189		-1.1	20.0
Carbazole	1.080	1.068		1.1	
Di-n-butylphthalate	1.659	1.675		0.1	20.0
Fluoranthene	1.302	1.335		-2.5	20.0
Pyrene	1.463	1.487		-1.6	20.0
Benzidine	0.492	0.506		-2.8	
Butylbenzylphthalate	0.898	0.910		-1.3	20.0
3,3'-Dichlorobenzidine	0.513	0.547		-6.6	20.0
Benzo(a)anthracene	1.273	1.260		1.0	20.0
Chrysene	1.237	1.221		1.3	20.0
bis(2-Ethylhexyl)phthalate	1.226	1.357		-10.5	20.0
Di-n-octylphthalate	2.182	2.182		0.0	20.0
Benzo(b)fluoranthene	1.355	1.359		-0.0	20.0
Benzo(k)fluoranthene	1.425	1.516		-6.2	20.0
Benzo(a)pyrene	1.248	1.253		-0.0	20.0
Indeno(1,2,3-cd)pyrene	1.285	1.319		-2.6	20.0
Dibenz(a,h)anthracene	1.257	1.290		-2.6	20.0
Benzo(g,h,i)perylene	1.267	1.282		-1.0	20.0
Pyridine	1.227	1.019		17.0	
Aniline	2.008	2.063		-2.7	
Benzyl Alcohol	0.923	0.982		-6.2	
1,2-Diphenylhydrazine	0.970	0.971		-0.0	
Diphenyl	1.496	1.561	0.001	-4.3	20.0
Diphenyl Ether	0.805	0.812	0.001	0.1	20.0
Acetophenone	2.023	2.274	0.001	-12.4	20.0

SEMOVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS4

Calibration Date: 12/01/98 Time: 1148

Lab File ID: U5476

Init. Calib. Date(s): 11/09/98 11/09/98

Init. Calib. Times: 0948 1423

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
N,N-Dimethylaniline	2.010	2.247	0.001	-11.6	20.0
1,4-Dioxane	0.503	0.408	0.001	18.9	20.0
2-Fluorophenol (SUR)	1.267	1.263		0.3	
Phenol-d5 (SUR)	1.739	1.798		-3.2	
2,4,6-Tribromophenol (SUR)	0.255	0.253		0.8	20.0
Nitrobenzene-d5 (SUR)	0.524	0.532		-1.5	
2-Fluorobiphenyl (SUR)	1.371	1.373		-0.0	
Terphenyl-d14 (SUR)	1.037	1.059		-2.1	

SEMI-VOLATILE SURROGATE RECOVERY
METHOD 625

Matrix: WATER

Level: LOW

Lab Job No: J322

LAB SAMPLE NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
01 WB328	36	22	98	92	95	98	0
02 98397				88	89	106	0
03 98398				88	88	104	0
04 98395				92	90	108	0
05 98400				84	82	102	0
06 98401				87	93	107	0
07 98396				99	93	108	0
08 98399				87	86	113	0
09							
10							
11							
12							
13							
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29							
30							

QC LIMITS

S1	= 2-Fluorophenol	(29- 73)
S2	= Phenol-d5	(20- 51)
S3	= 2,4,6-Tribromophenol	(61-143)
S4	= Nitrobenzene-d5	(50-130)
S5	= 2-Fluorobiphenyl	(55-131)
S6	= Terphenyl-d14	(73-138)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

SEMI-VOLATILE SPIKE RECOVERY SUMMARY
METHOD 625

Matrix: WATER

Matrix Spike - Lab Sample No.: 97405

Level: LOW

MS Sample from Lab Job No: J215

QA Batch: 4261

Compound	MS % REC.	BS % REC.	LIMITS
bis (2-Chloroethyl) ether	86	97	12-158
1,3-Dichlorobenzene	64	72	0-172
1,4-Dichlorobenzene	65	72	20-124
1,2-Dichlorobenzene	63	72	32-129
bis (2-chloroisopropyl) ether	99	110	36-166
N-Nitroso-di-n-propylamine	91	100	0-230
Hexachloroethane	63	70	40-113
Nitrobenzene	59	66	35-180
Isophorone	82	90	21-196
bis (2-Chloroethoxy) methane	97	110	33-184
1,2,4-Trichlorobenzene	65	73	44-142
Naphthalene	78	85	21-133
Hexachlorobutadiene	51	55	24-116
2-Chloronaphthalene	82	91	60-118
Dimethylphthalate	35	28	0-112
Acenaphthylene	86	95	33-145
2,6-Dinitrotoluene	87	93	50-158
Acenaphthene	81	87	47-145
2,4-Dinitrotoluene	91	96	39-139
Diethylphthalate	61	56	0-114
4-Chlorophenyl-phenylether	86	92	25-158
Fluorene	91	96	59-121
4-Bromophenyl-phenylether	85	88	53-127
Hexachlorobenzene	80	84	0-152
Phenanthrene	94	96	54-120
Anthracene	85	89	27-133
Di-n-butylphthalate	81	83	1-118
Fluoranthene	91	94	26-137
Pyrene	95	97	52-115
Butylbenzylphthalate	77	79	0-152

* Values outside of QC limits

SEMI-VOLATILE SPIKE RECOVERY SUMMARY
METHOD 625

Matrix: WATER

Matrix Spike - Lab Sample No.: 97405

Level: LOW

MS Sample from Lab Job No: J215

QA Batch: 4261

Compound	MS % REC.	BS % REC.	LIMITS
3,3'-Dichlorobenzidine	83	89	0-262
Benzo(a)anthracene	96	99	33-143
Chrysene	99	100	17-168
bis(2-Ethylhexyl)phthalate	89	94	8-158
Di-n-octylphthalate	94	96	4-146
Benzo(b)fluoranthene	95	96	24-159
Benzo(k)fluoranthene	88	92	11-162
Benzo(a)pyrene	98	100	17-163
Indeno(1,2,3-cd)pyrene	100	100	0-171
Dibenz(a,h)anthracene	97	98	0-227
Benzo(g,h,i)perylene	100	110	0-219

* Values outside of QC limits

Spike Recovery: 0 out of 82 outside limits

COMMENTS: _____

SEMOVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): S9240

Date Analyzed: 12/02/98

Instrument ID: BNAMS2

Time Analyzed: 0919

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (CRY) AREA #	RT #
12 HOUR STD	271210	12.71	1029430	14.90	1304381	24.66
UPPER LIMIT	542420	13.21	2058860	15.40	2608762	25.16
LOWER LIMIT	135605	12.21	514715	14.40	652190	24.16
LABORATORY SAMPLE NO.						
01 98397	268419	12.73	1015126	14.90	1352771	24.65
02 98398	245568	12.73	928409	14.90	1204128	24.65
03						
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IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (CRY) = Chrysene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMICVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): S9240

Date Analyzed: 12/02/98

Instrument ID: BNAMS2

Time Analyzed: 0919

	IS4 (ANT) AREA #	RT #	IS5 (PHN) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	675203	17.82	1255245	20.28	1095730	27.89
UPPER LIMIT	1350406	18.32	2510490	20.78	2191460	28.39
LOWER LIMIT	337602	17.32	627622	19.78	547865	27.39
LABORATORY SAMPLE NO.						
01 98397	670080	17.83	1265763	20.28	1218441	27.89
02 98398	608811	17.83	1137727	20.28	1086097	27.89
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22						

IS4 (ANT) = Acenaphthene-d10

IS5 (PHN) = Phenanthrene-d10

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMOVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): S9273

Date Analyzed: 12/03/98

Instrument ID: BNAMS2

Time Analyzed: 0932

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (CRY) AREA #	RT #
12 HOUR STD	303072	12.74	1111743	14.92	1335086	24.68
UPPER LIMIT	606144	13.24	2223486	15.42	2670172	25.18
LOWER LIMIT	151536	12.24	555872	14.42	667543	24.18
LABORATORY SAMPLE NO.						
01 98395	244750	12.74	951501	14.92	1216330	24.67
02 98400	251705	12.74	977384	14.92	1269186	24.67
03 98401	274817	12.74	1028765	14.92	1367359	24.67
04 98396	237250	12.74	915328	14.92	1130579	24.67
05 98399	258310	12.74	983742	14.92	1170011	24.66
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (CRY) = Chrysene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMOVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): S9273

Date Analyzed: 12/03/98

Instrument ID: BNAMS2

Time Analyzed: 0932

	IS4 (ANT) AREA #	RT #	IS5 (PHN) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	719015	17.84	1329525	20.30	1116583	27.92
UPPER LIMIT	1438030	18.34	2659050	20.80	2233166	28.42
LOWER LIMIT	359508	17.34	664762	19.80	558292	27.42
LABORATORY SAMPLE NO.						
01 98395	637563	17.84	1187052	20.30	1126787	27.91
02 98400	654937	17.84	1226344	20.30	1147549	27.92
03 98401	686850	17.84	1302051	20.30	1217426	27.92
04 98396	612057	17.84	1132100	20.30	1070567	27.92
05 98399	650018	17.84	1186777	20.30	1109860	27.91
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (ANT) = Acenaphthene-d10

IS5 (PHN) = Phenanthrene-d10

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): U5476

Date Analyzed: 12/01/98

Instrument ID: BNAMS4

Time Analyzed: 1148

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (CRY) AREA #	RT #
12 HOUR STD	368701	12.72	1288837	14.90	1488969	24.64
UPPER LIMIT	737402	13.22	2577674	15.40	2977938	25.14
LOWER LIMIT	184350	12.22	644418	14.40	744484	24.14
LABORATORY SAMPLE NO.						
01 WB328	348108	12.71	1242682	14.89	1595335	24.62
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (CRY) = Chrysene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMITOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): U5476

Date Analyzed: 12/01/98

Instrument ID: BNAMS4

Time Analyzed: 1148

	IS4 (ANT) AREA #	RT #	IS5 (PHN) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	867339	17.81	1596434	20.27	1443052	27.88
UPPER LIMIT	1734678	18.31	3192868	20.77	2886104	28.38
LOWER LIMIT	433670	17.31	798217	19.77	721526	27.38
LABORATORY SAMPLE NO.						
01 WB328	891582	17.80	1636768	20.26	1513396	27.85
02						
03						
04						
05						
06						
07						
08						
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17						
18						
19						
20						
21						
22						

IS4 (ANT) = Acenaphthene-d10

IS5 (PHN) = Phenanthrene-d10

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

Client ID: MW-15I
Site: L.E. Carpenter

Lab Sample No: 98395
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8367.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

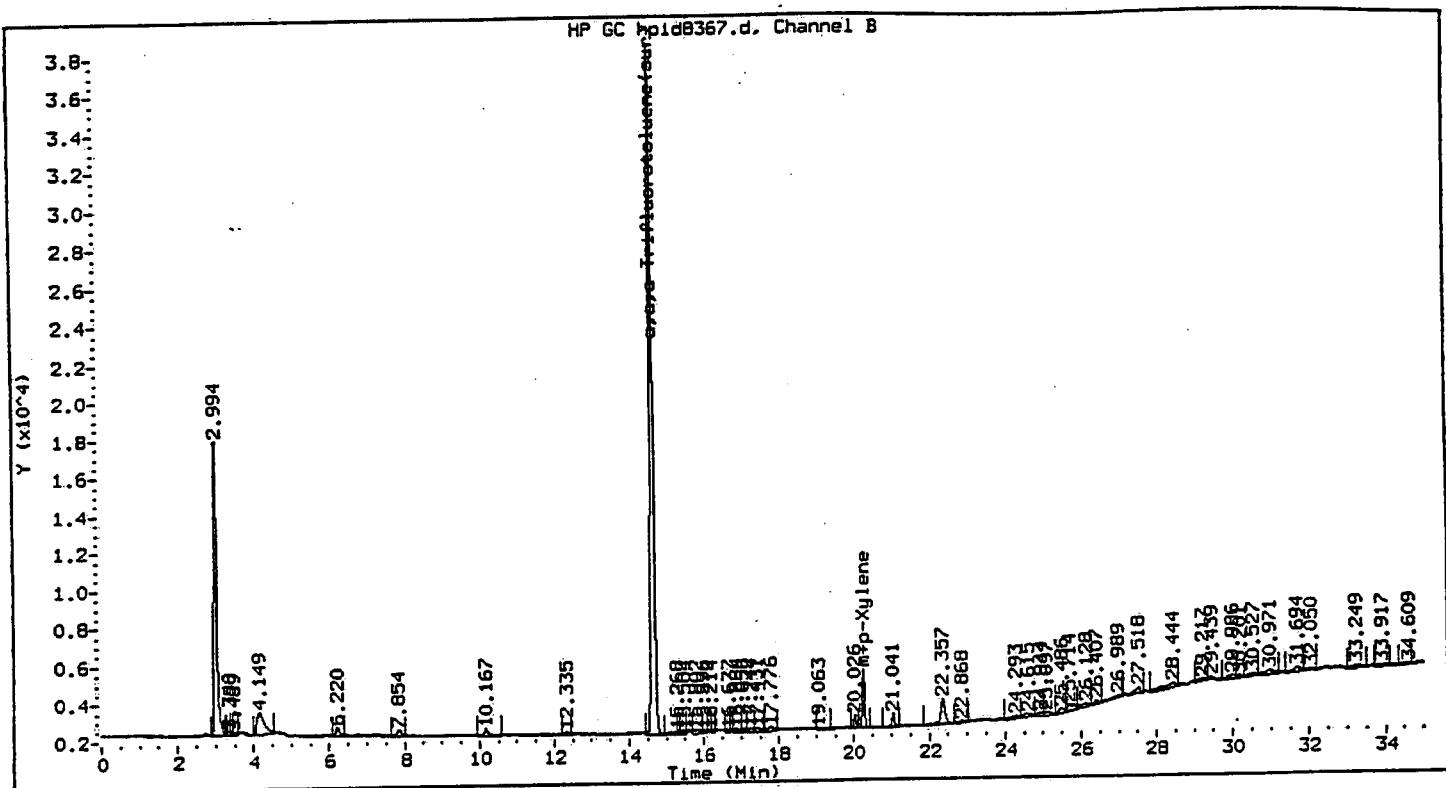
VOLATILE ORGANICS - GC/PID
METHOD 602

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	0.53	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98395

Lab ID : 98395

Inj Date : 24-NOV-1998 11:58

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
m+p-Xylene	20.253	20.253	0.000	65422	0.511	0.511
Xylene (Total)	25.019	25.019	0.000	65422	0.533	0.533
a,a,a-Trifluorotoluene(sur)	14.648	14.643	0.005	1045940	28.319	28.319

Client ID: MW-22R
Site: L.E. Carpenter

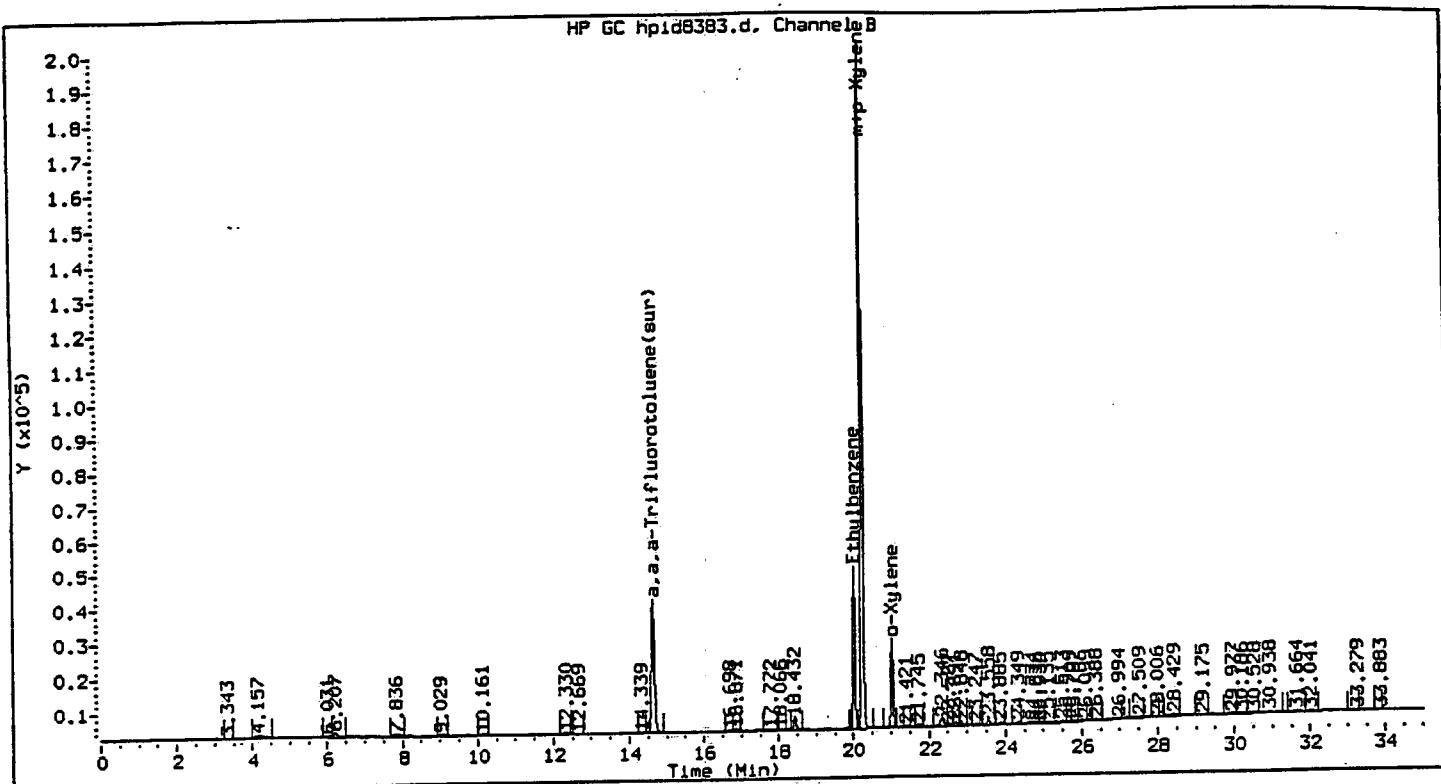
Lab Sample No: 98396
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8383.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	40.0
Toluene	ND	28.0
Ethylbenzene	1650	28.0
Xylene (Total)	7230	100



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98396;;200

Lab ID : 98396

Inj Date : 24-NOV-1998 23:03

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 200

Sample Matrix : WATER

Sample Type: SAMPLE

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
m+p-Xylene	20.246	20.253	0.007	3938008	30.764	6152.811
o-Xylene	21.033	21.036	0.003	499329	4.452	890.412
Ethylbenzene	20.018	20.021	0.003	920679	8.256	1651.125
Xylene (Total)	25.019	25.019	0.000	4437337	36.157	7231.441
a,a,a-Trifluorotoluene(sur)	14.637	14.643	0.005	1109337	30.036	30.036

Client ID: MW-25R
Site: L.E. Carpenter

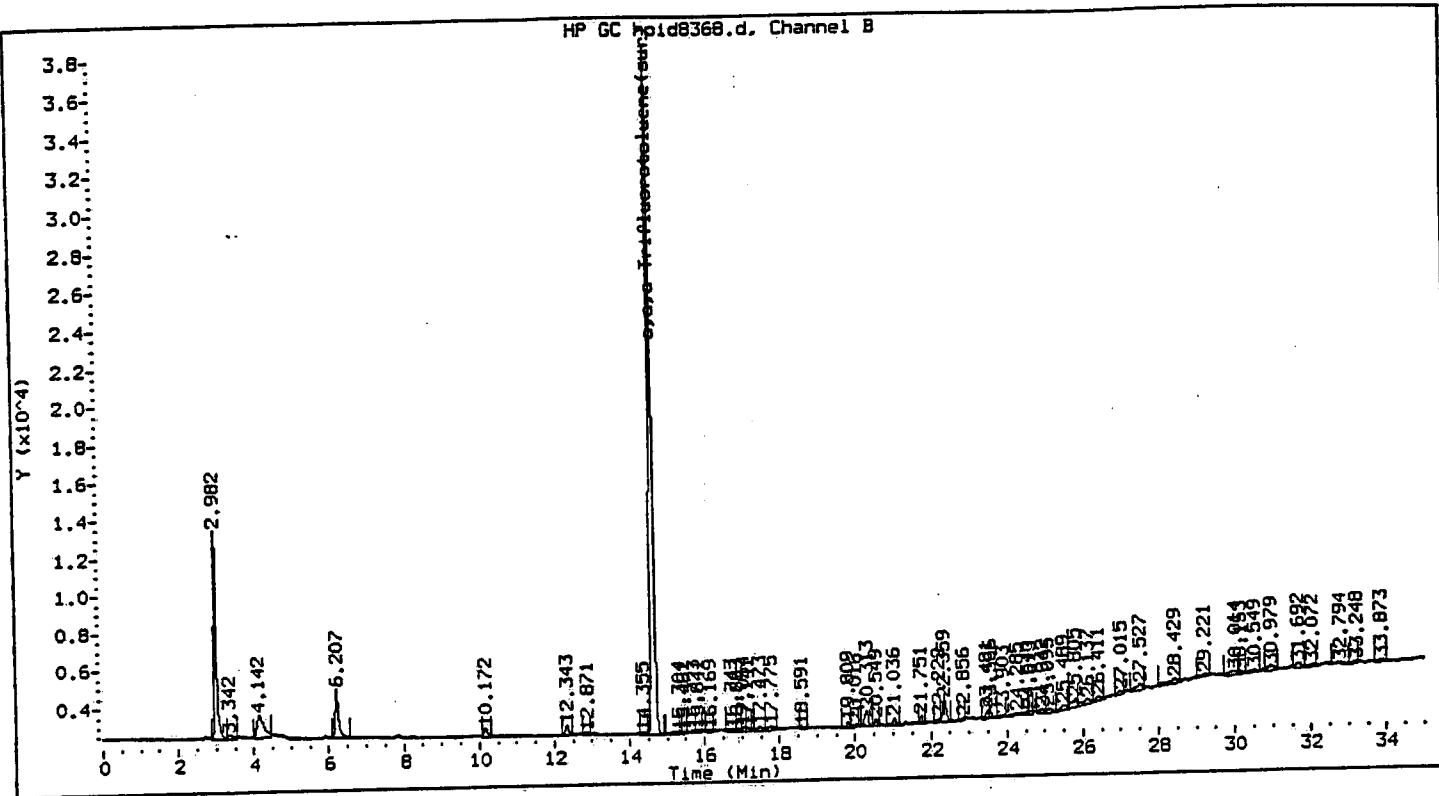
Lab Sample No: 98397
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8368.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98397

Lab ID : 98397

Inj Date : 24-NOV-1998 12:40

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/L)
a, a, a-Trifluorotoluene(sur)	14.645	14.643	0.003	1030552	27.903

Client ID: MW-14J
Site: L.E. Carpenter

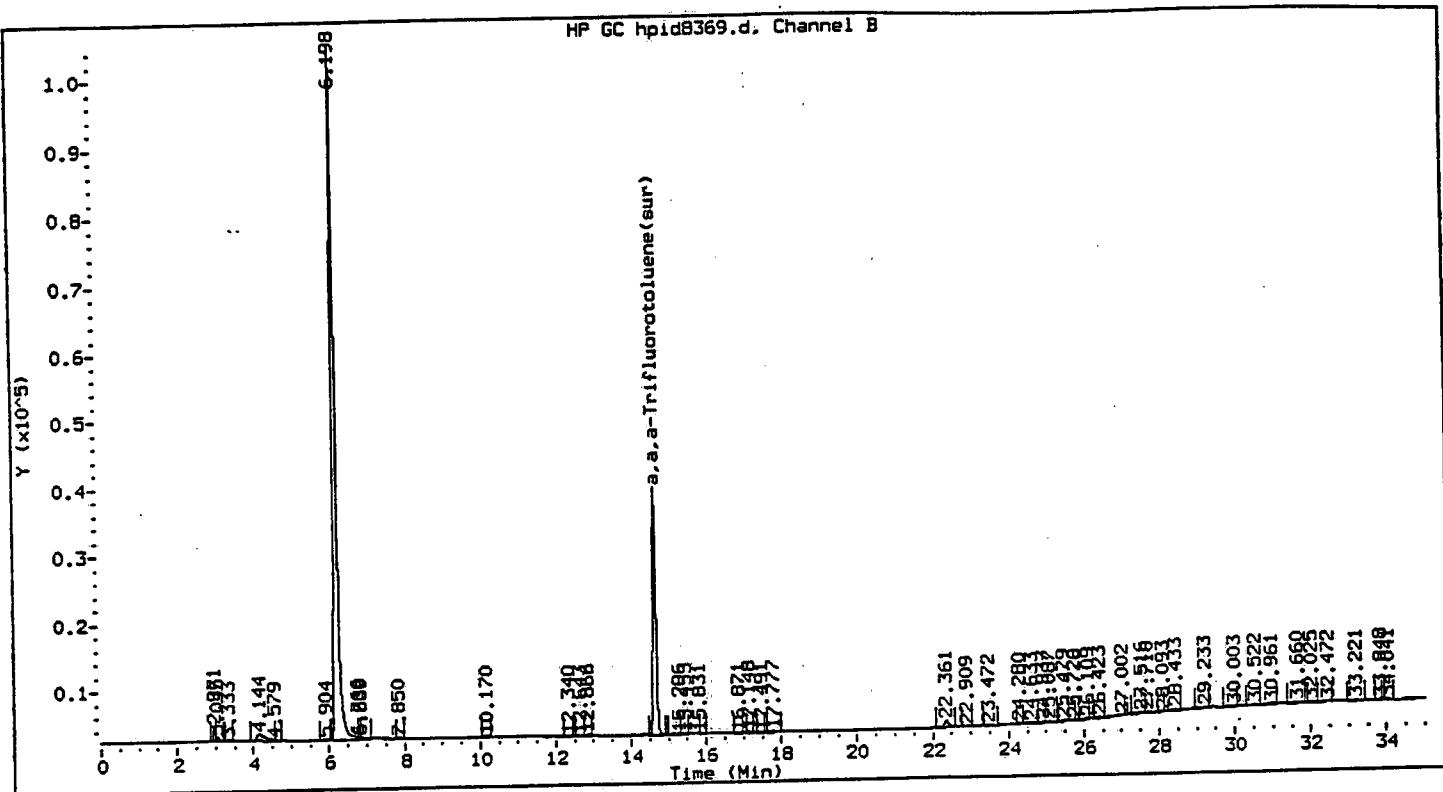
Lab Sample No: 98398
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8369.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units:</u> ug/l	<u>Units:</u> ug/l
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98398

Lab ID : 98398

Inj Date : 24-NOV-1998 13:21

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.646	14.643	0.004	1035460	28.036	28.036

Client ID: MW-4
Site: L.E. Carpenter

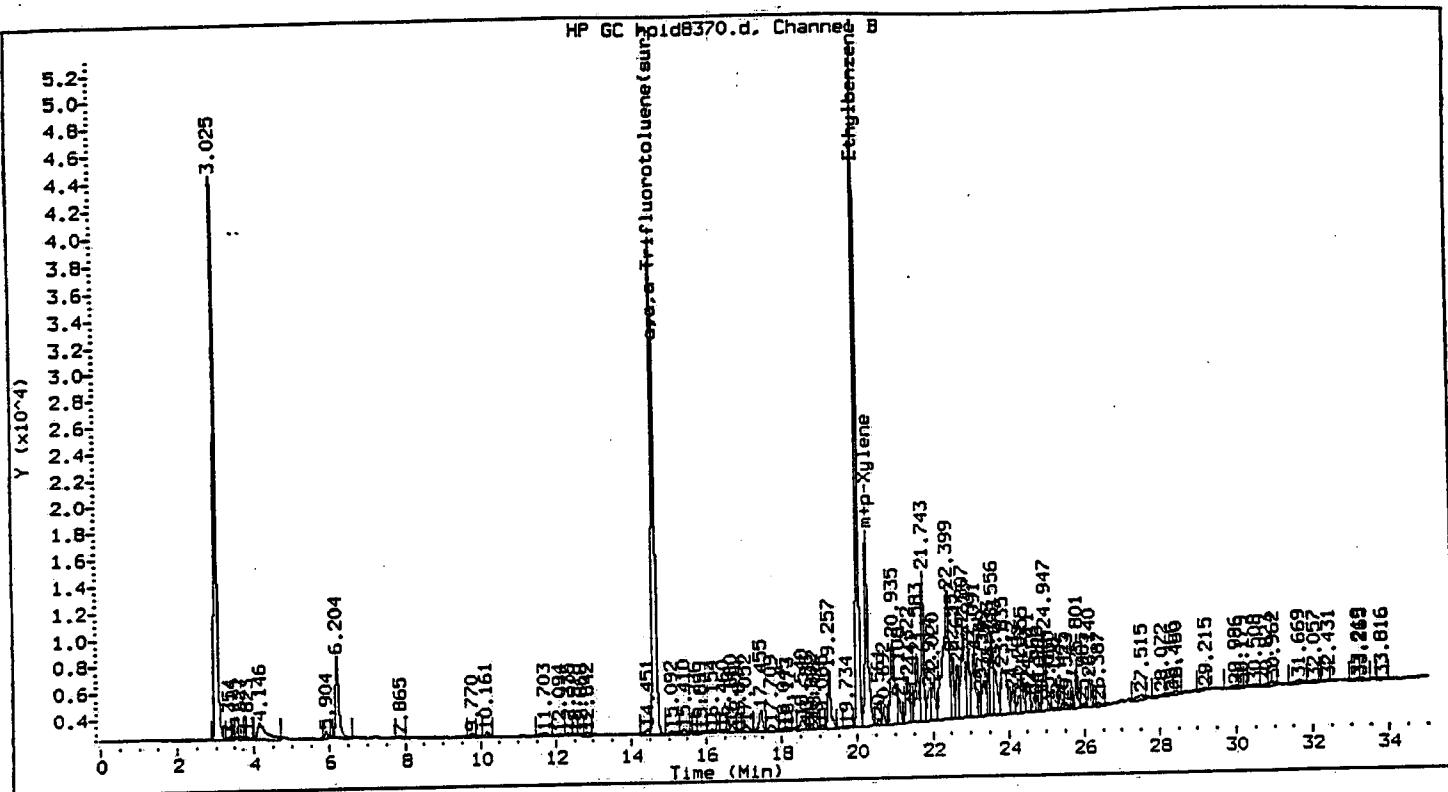
Lab Sample No: 98399
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8370.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units:</u> ug/l	<u>Method Detection Limit</u> <u>Units:</u> ug/l
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	9.3	0.14
Xylene (Total)	3.3	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98399

Lab ID : 98399

Inj Date : 24-NOV-1998 14:03

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
m+p-Xylene	20.252	20.253	0.001	403684	3.154	3.154
Ethylbenzene	20.020	20.021	0.001	1037534	9.303	9.303
Xylene (Total)	25.019	25.019	0.000	403684	3.289	3.289
a,a,a-Trifluorotoluene(sur)	14.641	14.643	0.002	1063340	28.790	28.790

Client ID: MW-15ID
Site: L.E. Carpenter

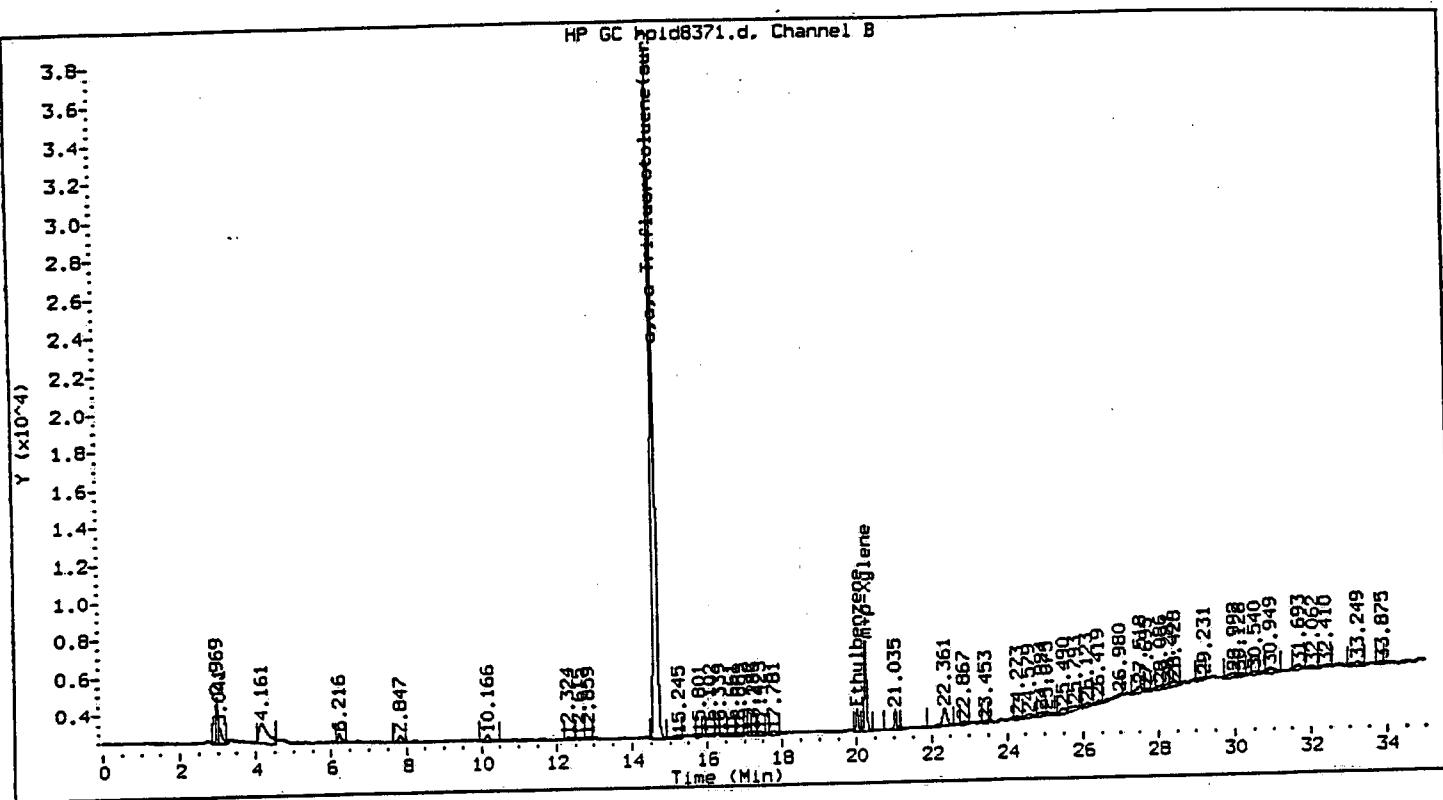
Lab Sample No: 98400
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8371.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	0.22	0.14
Xylene (Total)	0.80	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98400

Lab ID : 98400

Inj Date : 24-NOV-1998 14:44

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
m+p-Xylene	20.247	20.253	0.006	98518	0.770	0.770
Ethylbenzene	20.020	20.021	0.001	24292	0.218	0.218
Xylene (Total)	25.019	25.019	0.000	98518	0.803	0.803
a,a,a-Trifluorotoluene(sur)	14.639	14.643	0.004	1035328	28.032	28.032

Client ID: Field_Blank
Site: L.E. Carpenter

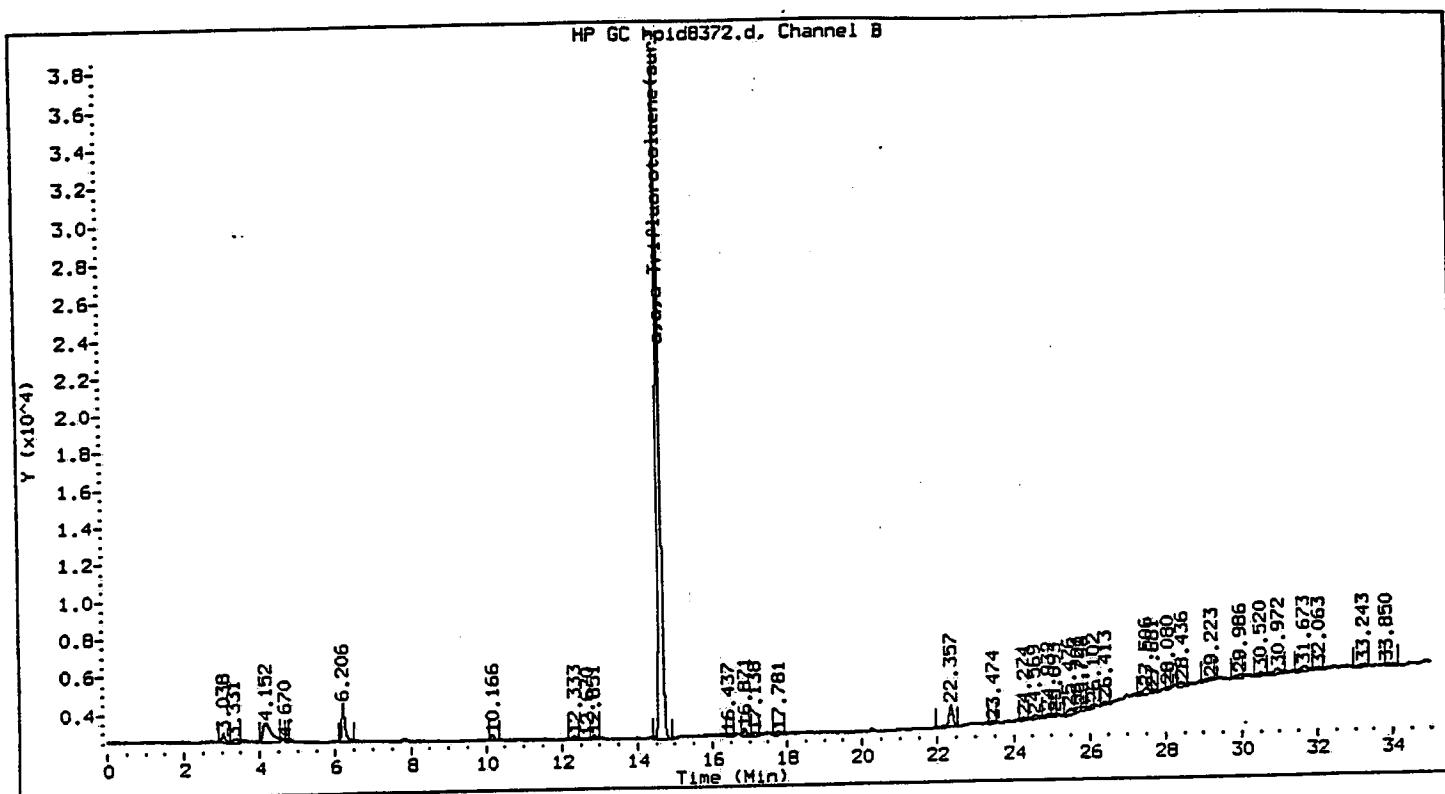
Lab Sample No: 98401
Lab Job No: J322

Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8372.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units:</u> ug/l	<u>Method Detection Limit</u> <u>Units:</u> ug/l
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98401

Lab ID : 98401

Inj Date : 24-NOV-1998 15:26

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.638	14.643	0.005	1046423	28.332	28.332

Client ID: Trip_Blank
Site: L.E. Carpenter

Lab Sample No: 98402
Lab Job No: J322

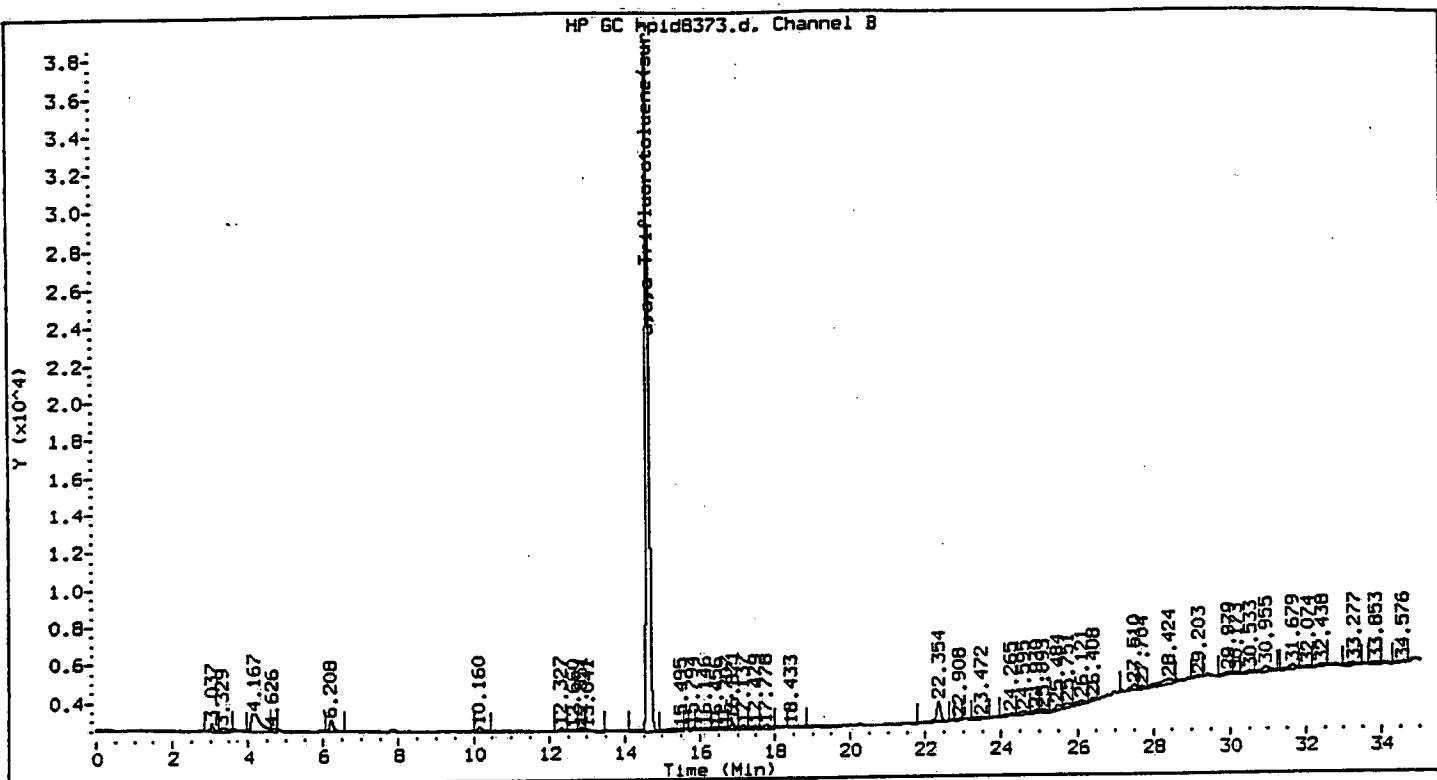
Date Sampled: 11/20/98
Date Received: 11/20/98
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8373.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

Parameter

	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.20
Toluene	ND	0.14
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : 98402

Lab ID : 98402

Inj Date : 24-NOV-1998 16:08

Operator : kb

Cpnd Sublist: BTEX

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.636	14.643	0.006	1048241	28.382	28.382

VOLATILE METHOD BLANK SUMMARY

HG328

Date Analyzed: 11/24/98

Instrument ID: VOAGC2

Time Analyzed: 0939

Lab File ID: HPID8364

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT ID.	LAB SAMPLE NO	LAB FILE ID	TIME ANALYZED
01 MW-15I	98395	HPID8367	1158
02 MW-25R	98397	HPID8368	1240
03 MW-14J	98398	HPID8369	1321
04 MW-4	98399	HPID8370	1403
05 MW-15ID	98400	HPID8371	1444
06 FIELD BLANK	98401	HPID8372	1526
07 TRIP BLANK	98402	HPID8373	1608
08 MW-22R	98396	HPID8383	2303
09 MW-22RMS	98396MS	HPID8384	2344
10 MW-22RMSD	98396MSD	HPID8385	0025
11			
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29			
30			

COMMENTS:

Client ID: HG328
Site:

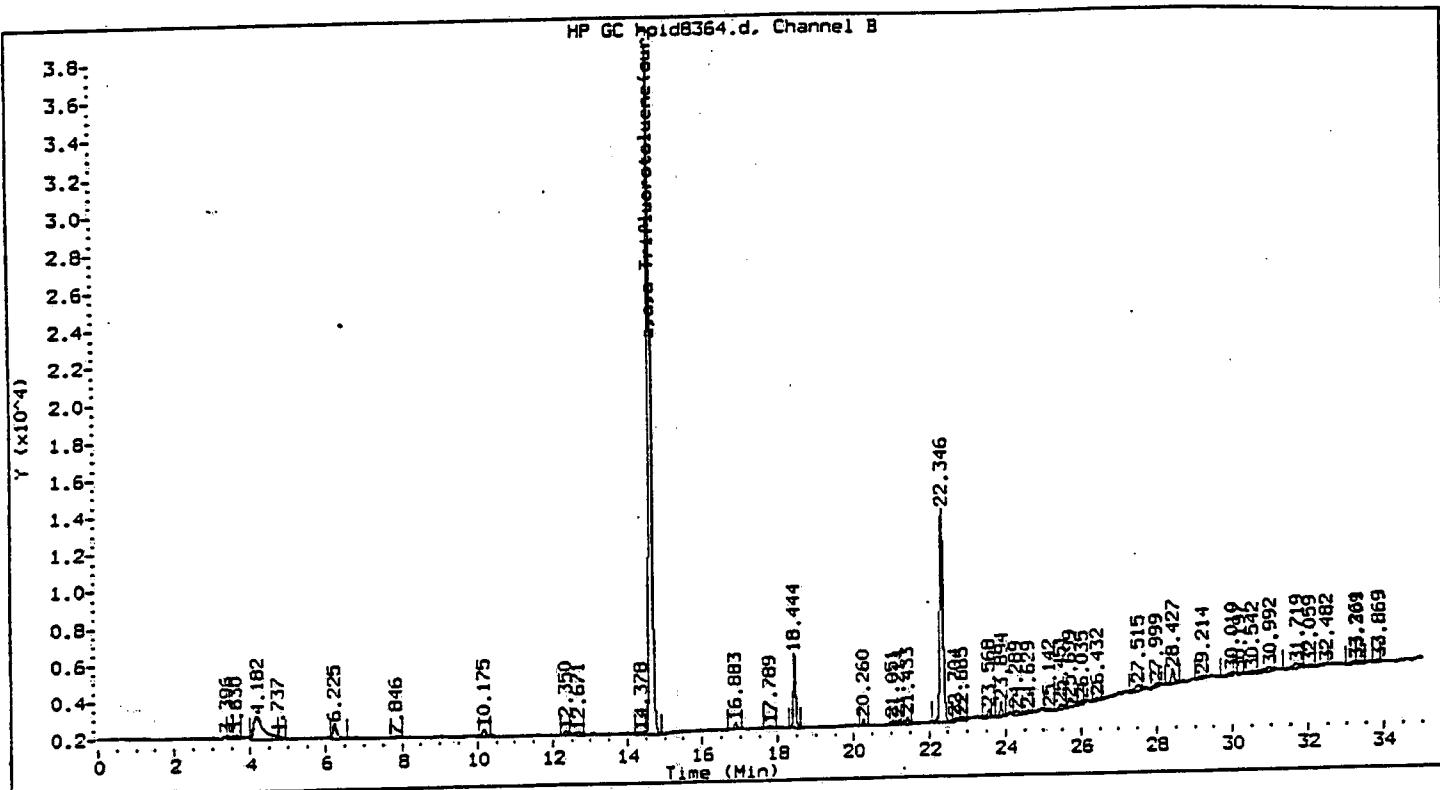
Lab Sample No: HG328
Lab Job No: J322

Date Sampled: _____
Date Received: _____
Date Analyzed: 11/24/98
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid8364.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
TBA	ND	100
MTBE	ND	0.50
DIPE	ND	0.50
Benzene	ND	0.20
Toluene	ND	0.14
Chlorobenzene	ND	0.11
Ethylbenzene	ND	0.14
Xylene (Total)	ND	0.50
1,3-Dichlorobenzene	ND	0.15
1,4-Dichlorobenzene	ND	0.13
1,2-Dichlorobenzene	ND	0.10



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : HG328

Lab ID : HG328

Inj Date : 24-NOV-1998 09:39

Operator : kb

Cpnd Sublist: 602

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: BLANK

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.653	14.643	0.010	1053009	28.511	28.511

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC2

Calibration Date(s): 10/28/98 10/28/98

Calibration Time(s): 1010 1347

LAB FILE ID:	RRF2: HPID8158 RRF20: HPID8156	RRF5: HPID8154 RRF40: HPID8157	RRF10: HPID8155
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COMPOUND	RRF2	RRF5	RRF10	RRF20	RRF40
TBA **	449	480	440	433	
MTBE	60424	56023	56228	56017	55473
DIPE	64387	63017	62174	61587	63486
Benzene	133526	125112	125307	122728	119907
Toluene	131036	125660	125804	122196	117356
Chlorobenzene	131505	130139	131234	129720	127003
Ethylbenzene	113098	112214	113549	112172	106574
Xylene (Total)	123136	122159	124645	123264	120412
1,3-Dichlorobenzene	103547	95758	101887	106307	108986
1,4-Dichlorobenzene	99328	91475	97463	102008	104998
1,2-Dichlorobenzene	80013	75346	79208	83384	85427
a,a,a-Trifluorotoluene (sur)	35270	37685	37779	36418	37517

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC2

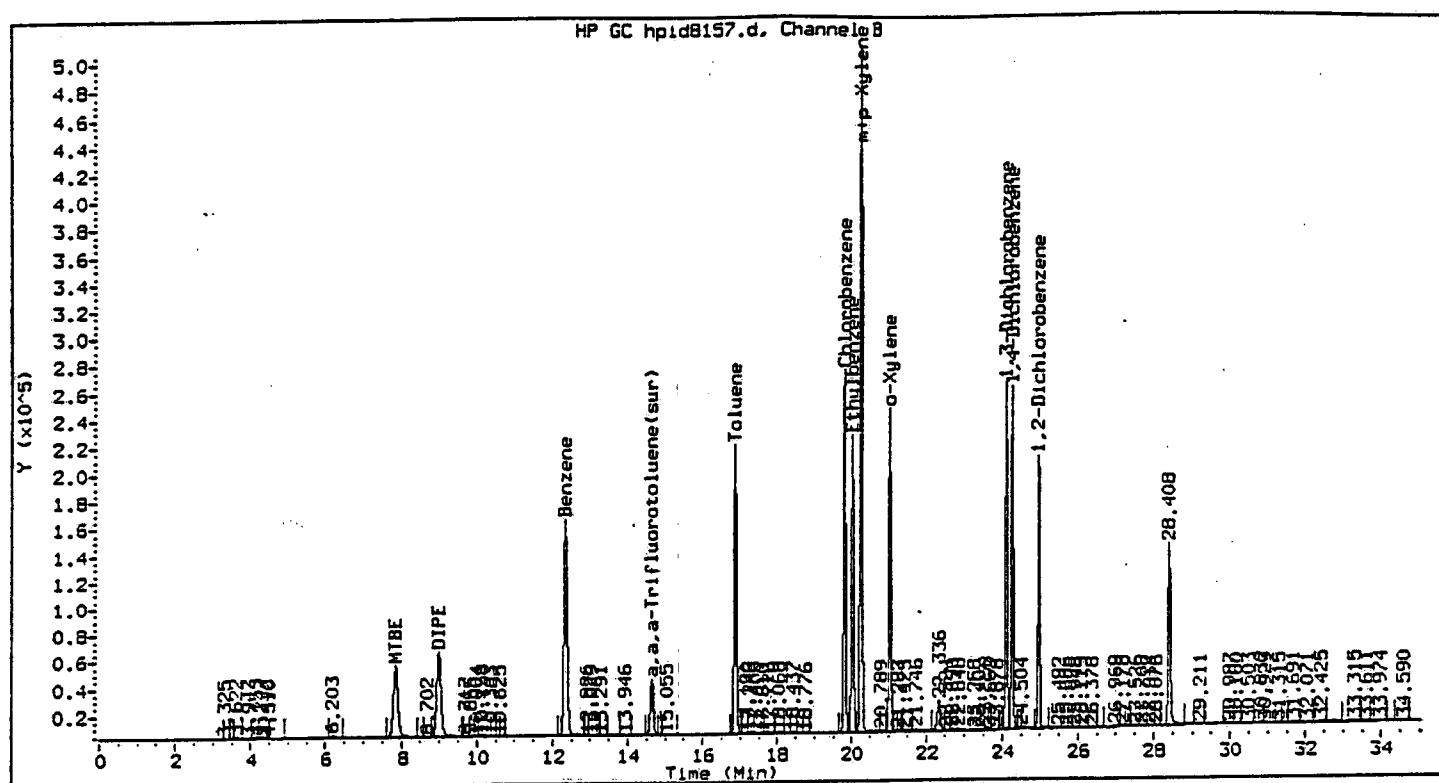
Calibration Date(s): 10/28/98 10/28/98

Calibration Time(s): 1010 1347

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
TBA **	AVRG	451	4.6*
MTBE	AVRG	56833	3.6*
DIPE	AVRG	62930	1.7*
Benzene	AVRG	125316	4.0*
Toluene	AVRG	124410	4.1*
Chlorobenzene	AVRG	129920	1.4*
Ethylbenzene	AVRG	111521	2.5*
Xylene (Total)	AVRG	122723	1.3*
1,3-Dichlorobenzene	AVRG	103297	4.8*
1,4-Dichlorobenzene	AVRG	99054	5.2*
1,2-Dichlorobenzene	AVRG	80676	4.8*
a,a,a-Trifluorotoluene (sur)	AVRG	36934	2.9*

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

* Compounds with required maximum %RSD values.



Method : /chem/VOAGC2.i/602/10-28-98/28oct98.b/GC2-602.m

Sample Info : HSTD040

Lab ID : HSTD040

Inj Date : 28-OCT-1998 12:13

Operator : kb

Cpnd Sublist: 602

Inst ID : VOAGC2.i

Dil Factor : 1

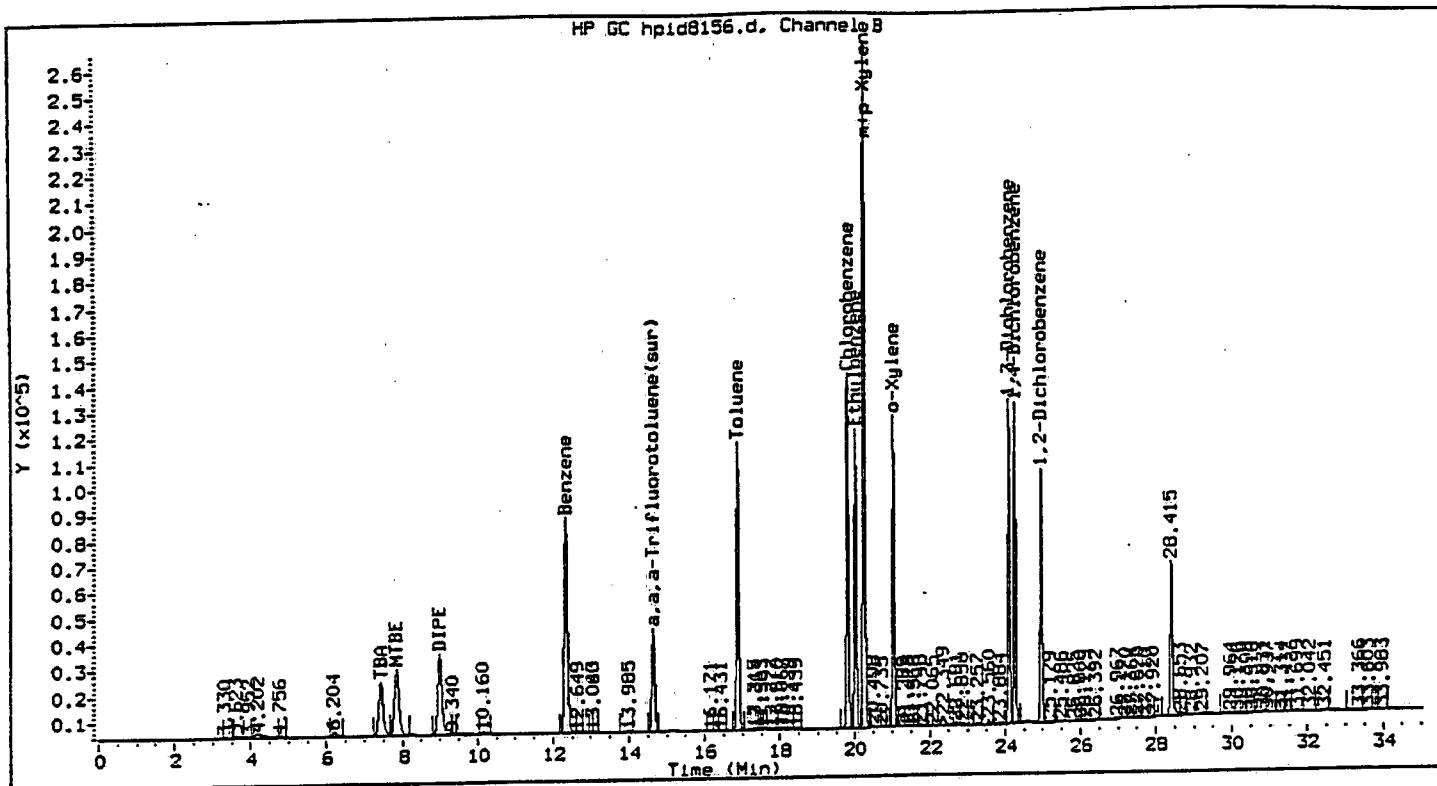
Sample Matrix : WATER

Sample Type: CALIB_5

CONCENTRATIONS
ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
c-Xylene	21.036	21.036	0.001	4485255	40.057	40.057
m,p-Xylene	20.253	20.253	0.000	9964243	77.880	77.880
MTBE	7.848	7.846	0.002	2218923	39.670	39.670
DIPPE	8.992	8.989	0.003	2539425	40.588	40.588
Benzene	12.343	12.339	0.004	4796291	38.911	38.911
Toluene	16.875	16.874	0.001	4694222	38.241	38.241
Chlorobenzene	19.805	19.805	0.000	5080130	39.222	39.222
Ethylbenzene	20.021	20.021	0.000	4262940	38.361	38.361
Xylene (Total)	25.019	25.019	0.000	14449498	117.839	117.839

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/L)	FINAL (ug/L)
1,3-Dichlorobenzene	24.115	24.117	0.002	4359429	42.228	42.228
1,4-Dichlorobenzene	24.274	24.276	0.002	4199933	42.429	42.429
1,2-Dichlorobenzene	24.969	24.973	0.003	3417098	42.269	42.269
a,a,a-Trifluorotoluene(sux)	14.643	14.643	0.000	1125516	30.134	30.134

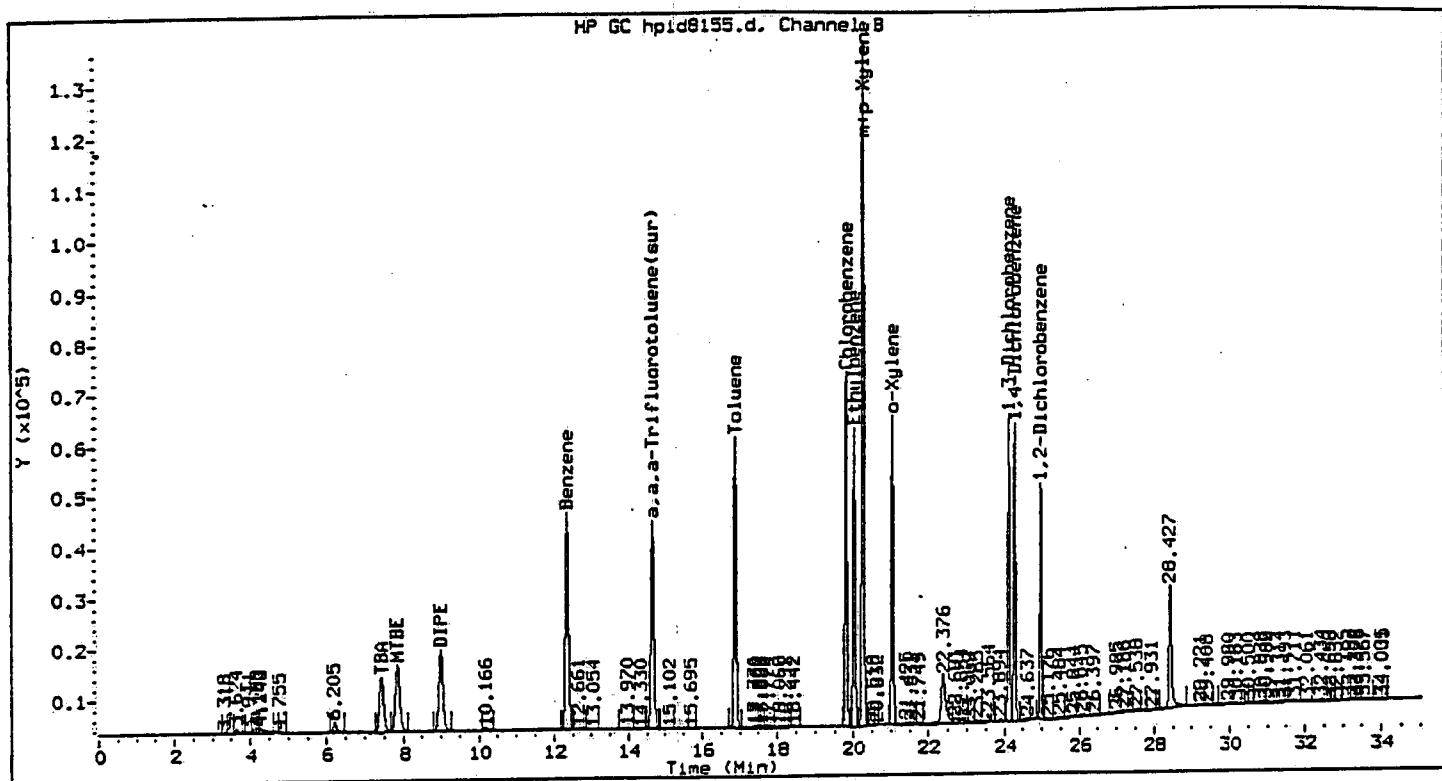


Method : /chem/VOAGC2.i/602/10-28-98/28oct98.b/GC2-602.m
 Sample Info : HSTD020
 Lab ID : HSTD020
 Inj Date : 28-OCT-1998 11:32
 Operator : kb
 Cpnd Sublist: 602

Inst ID : VOAGC2.i
 Dil Factor : 1
 Sample Matrix : WATER
 Sample Type: CALIB_4

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN (ug/L)	FINAL (ug/L)
o-Xylene	21.036	21.036	0.000	2247468	20.081 20.081
m+p-Xylene	20.253	20.253	0.000	5148397	39.887 39.887
TBA	7.434	7.438	0.004	866068	1919.020 1919.020
MTBE	7.852	7.846	0.006	1120333	19.974 19.974
DIPE	8.994	8.989	0.005	1231736	19.784 19.784
Benzene	12.344	12.339	0.005	2454557	19.734 19.734
Toluene	16.876	16.874	0.002	2443922	19.622 19.622
Chlorobenzene	19.806	19.805	0.001	2594402	19.901 19.901
Ethylbenzene	20.021	20.021	0.001	2243448	19.916 19.916

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total) ..	25.019	25.019	0.000	7395865	59.955	59.955
1,3-Dichlorobenzene	24.115	24.117	0.002	2126144	20.985	20.985
1,4-Dichlorobenzene	24.274	24.276	0.002	2040165	21.036	21.036
1,2-Dichlorobenzene	24.970	24.973	0.002	1667684	21.027	21.027
a,a,a-Trifluorotoluene(sur)	14.647	14.643	0.004	1092525	29.295	29.295

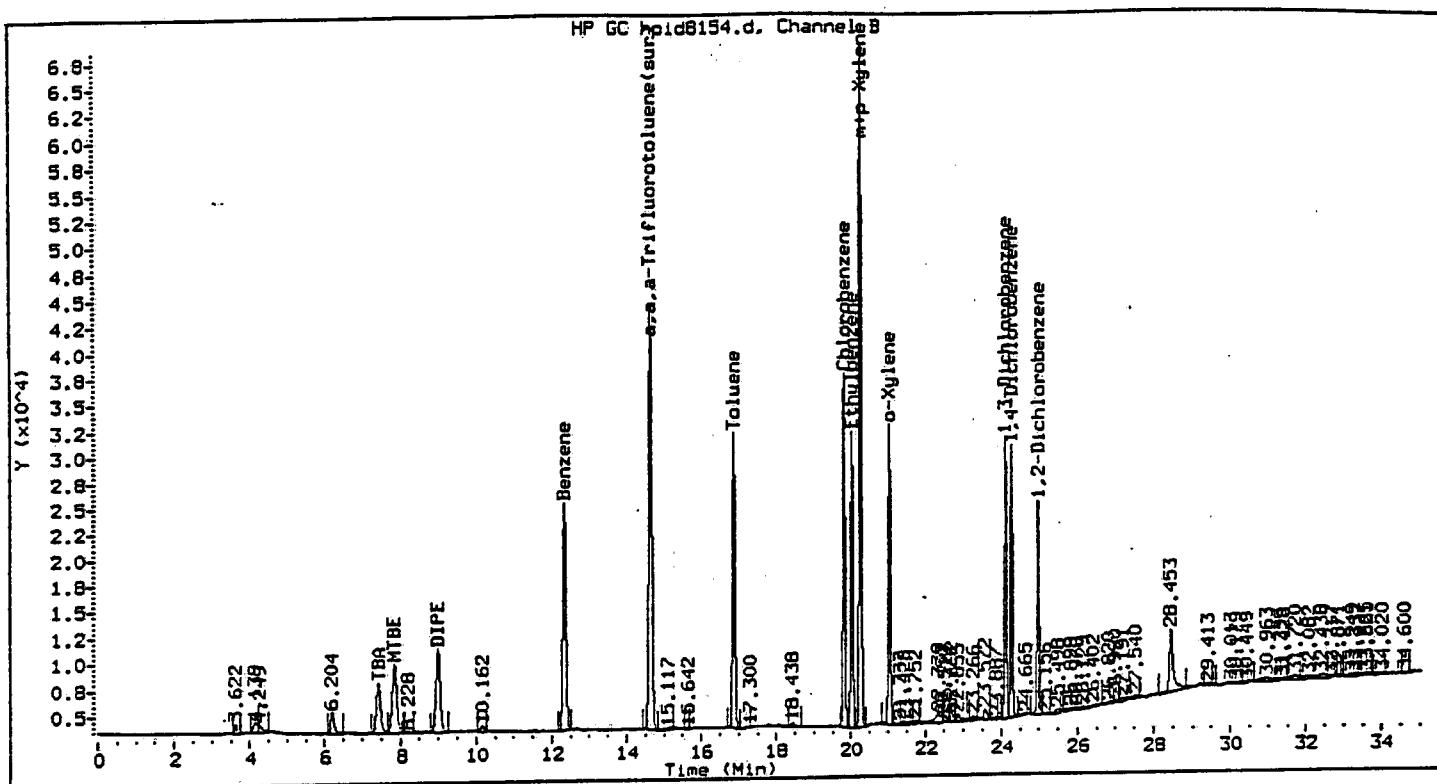


Method : /chem/VOAGC2.i/602/10-28-98/28oct98.b/GC2-602.m
 Sample Info : HSTD010
 Lab ID : HSTD010
 Inj Date : 28-OCT-1998 10:51
 Operator : kb
 Cpnd Sublist: 602

Inst ID : VOAGC2.i
 Dil Factor : 1
 Sample Matrix : WATER
 Sample Type: CALIB_3

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
c-Xylene	21.038	21.036	0.001	1127321	10.093 10.093
m+p-Xylene	20.254	20.253	0.002	2612041	20.208 20.208
TBA	7.432	7.438	0.006	440333	956.323 956.323
MTBE	7.852	7.846	0.007	562278	10.018 10.018
DIPE	8.994	8.989	0.005	621742	9.933 9.933
Benzene	12.345	12.339	0.006	1253069	10.008 10.008
Toluene	16.877	16.874	0.003	1258035	10.006 10.006
Chlorobenzene	19.808	19.805	0.003	1312338	10.042 10.042
Ethylbenzene	20.023	20.021	0.002	1135494	10.059 10.059

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total) ..	25.019	25.019	0.000	3739362	30.302	30.302
1,3-Dichlorobenzene	24.118	24.117	0.001	1018866	10.310	10.310
1,4-Dichlorobenzene	24.277	24.276	0.001	974632	10.317	10.317
1,2-Dichlorobenzene	24.974	24.973	0.001	792079	10.250	10.250
a,a,a-Trifluorotoluene(sur)	14.647	14.643	0.005	1133380	30.037	30.037



Method : /chem/VOAGC2.i/602/10-28-98/28oct98.b/GC2-602.m

Sample Info : HSTD005

Lab ID : HSTD005

Inj Date : 28-OCT-1998 10:10

Operator : kb

Cpnd Sublist: 602

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

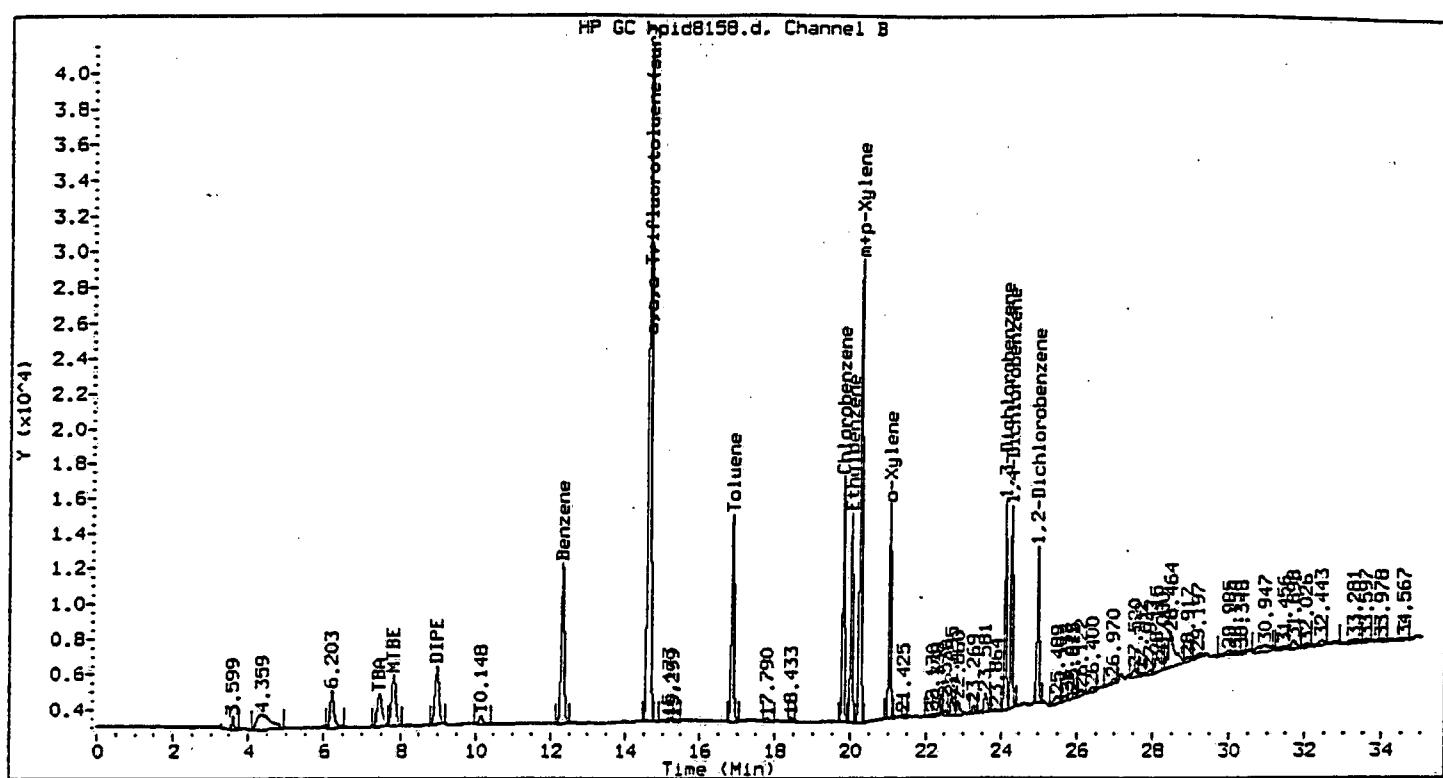
Sample Type: CALIB_2

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
o-Xylene	21.037	21.036	0.001	553271	5.000	5.000
m+p-Xylene	20.254	20.253	0.001	1279114	10.000	10.000
TBA	7.428	7.438	0.010	192222	400.000	400.000
MTBE	7.849	7.846	0.003	280116	5.000	5.000
DIPK	8.993	8.989	0.004	315084	5.000	5.000
Benzene	12.342	12.339	0.004	625560	5.000	5.000
Toluene	16.876	16.874	0.002	628299	5.000	5.000
Chlorobenzene	19.806	19.805	0.001	650693	5.000	5.000
Ethylbenzene	20.021	20.021	0.001	561072	5.000	5.000

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/L)	FINAL (ug/L)
Xylene (Total)	25.019	25.019	0.000	1832385	15.000	15.000
1,3-Dichlorobenzene	24.118	24.117	0.001	478789	5.000	5.000
1,4-Dichlorobenzene	24.278	24.276	0.002	457377	5.000	5.000
1,2-Dichlorobenzene	24.976	24.973	0.003	376732	5.000	5.000
a,a,a-Trifluorotoluene(sur)	14.646	14.643	0.003	1130552	30.000	30.000



Method : /chem/VOAGC2.i/602/10-28-98/28oct98.b/GC2-602.m
 Sample Info : HSTD002
 Lab ID : HSTD002
 Inj Date : 28-OCT-1998 13:47
 Operator : kb
 Cpnd Sublist: 602

Inst ID	: VOAGC2.i
Dil Factor	: 1
Sample Matrix	: WATER
Sample Type	: CALIB_1

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
c-Xylene	21.035	21.036	0.002	225786	2.013
m+p-Xylene	20.249	20.253	0.003	513030	4.008
TBA	7.456	7.438	0.018	89844	199.305
MTBE	7.828	7.846	0.018	120848	2.126
DIPE	8.971	8.989	0.018	128774	2.046
Benzene	12.321	12.339	0.018	267051	2.131
Toluene	16.866	16.874	0.008	262071	2.107
Chlorobenzene	19.800	19.805	0.005	263010	2.024
Ethylbenzene	20.017	20.021	0.004	226195	2.028

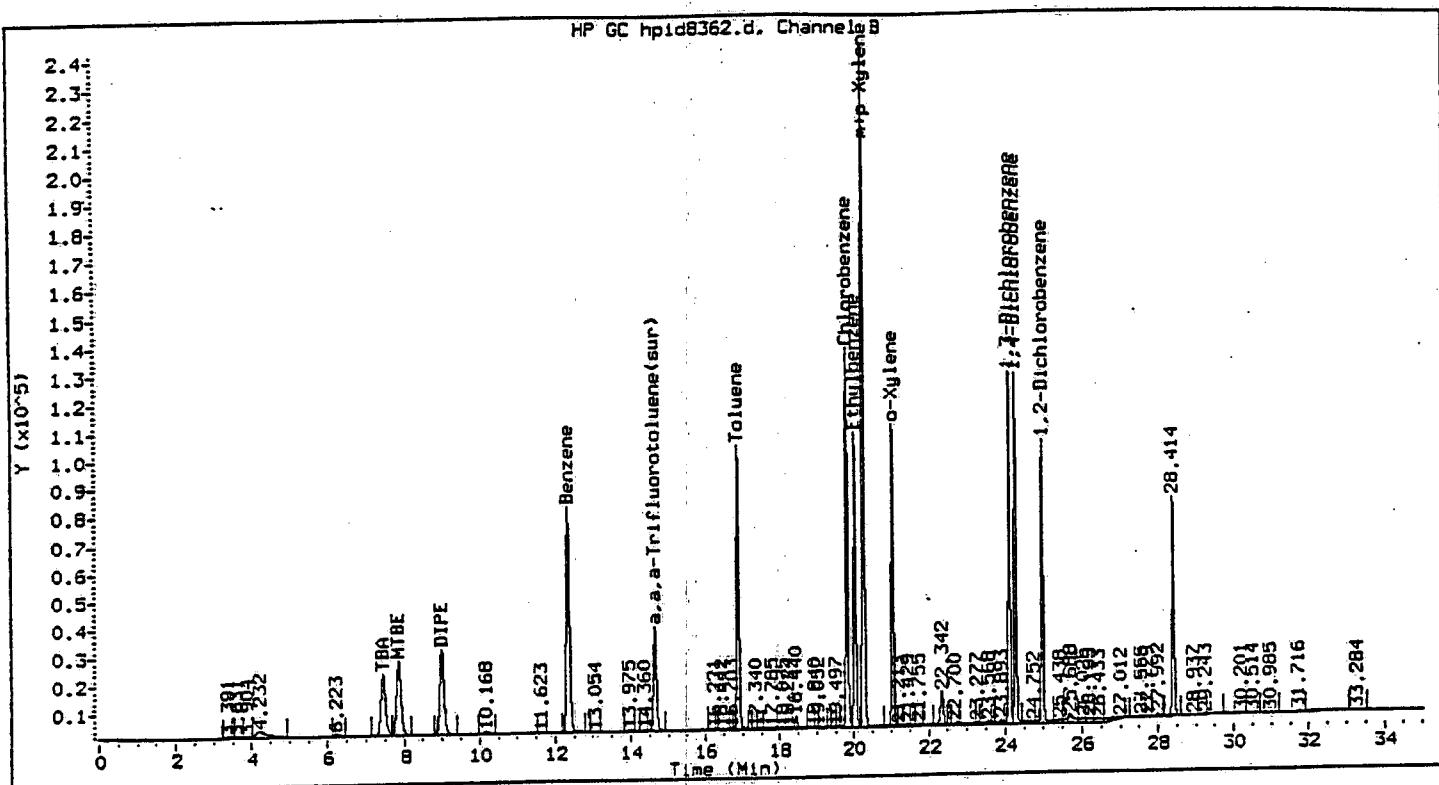
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total)	25.019	25.019	0.000	738816	6.020	6.020
1,3-Dichlorobenzene	24.117	24.117	0.001	207094	2.005	2.005
1,4-Dichlorobenzene	24.277	24.276	0.001	198655	2.006	2.006
1,2-Dichlorobenzene	24.975	24.973	0.002	160026	1.984	1.984
a,a,a-Trifluorotoluene(sur)	14.631	14.643	0.011	1058103	28.649	28.649

VOLATILE ORGANICS CONTINUING CALIBRATION CHECK

Instrument ID: VOAGC2 Calibration Date: 11/24/98 Time: 0804
 Lab File ID: HPID8362 Init. Calib. Date(s): 10/28/98 10/28/98
 Heated Purge: (Y/N) N Init. Calib. Times: 1010 1347

COMPOUND	RRF	RRF20	MIN RRF	%D	MAX %D
TBA **	450.78	457.96		-1.4	50.0
MTBE	56832.95	55253.05		2.8	50.0
DIPE	62930.08	59958.55		4.7	50.0
Benzene	125315.91	118546.45		5.4	23.0
Toluene	124410.09	111728.25		10.2	22.5
Chlorobenzene	129920.15	129687.00		0.2	19.5
Ethylbenzene	111521.44	101659.05		8.8	37.0
Xylene (Total)	122723.46	118830.63		3.2	50.0
1,3-Dichlorobenzene	103296.86	108431.40		-4.8	27.5
1,4-Dichlorobenzene	99054.53	105698.45		-6.7	30.5
1,2-Dichlorobenzene	80675.79	90756.25		-12.3	32.0
a,a,a-Trifluorotoluene(sur)	36933.84	35261.50		4.5	22.0

** TBA Continuing Calibration Level is RF2000.



Method : /chem/VOAGC2.i/602/10-28-98/24nov98.b/GC2-602.m

Sample Info : HSTD020
 Lab ID : HSTD020
 Inj Date : 24-NOV-1998 08:04
 Operator : kb
 Cpd Sublist: 602

Inst ID : VOAGC2.i
 Dil Factor : 1
 Sample Matrix : WATER
 Sample Type: CCALIB_4

CONCENTRATIONS
 ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
o-Xylene	21.043	21.036	0.007	2030494	18.104	18.104
m+p-Xylene	20.259	20.253	0.006	5099344	39.837	39.837
TBA	7.443	7.438	0.005	915927	2031.847	2031.847
MTBE	7.853	7.846	0.007	1105061	19.444	19.444
DIPE	8.997	8.989	0.008	1199171	19.056	19.056
Benzene	12.344	12.339	0.005	2370929	18.920	18.920
Toluene	16.880	16.874	0.007	2234565	17.961	17.961
Chlorobenzene	19.811	19.805	0.006	2593740	19.964	19.964
Ethylbenzene	20.027	20.021	0.006	2033181	18.231	18.231

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
Xylene (Total)	25.019	25.019	0.000	7129838	58.097	58.097
1,3-Dichlorobenzene	24.124	24.117	0.008	2168628	20.994	20.994
1,4-Dichlorobenzene	24.283	24.276	0.007	2113969	21.341	21.341
1,2-Dichlorobenzene	24.979	24.973	0.006	1815125	22.499	22.499
a,a,a-Trifluorotoluene(sur)	14.647	14.643	0.005	1057845	28.642	28.642

VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Matrix: WATER

Level: LOW

Lab Job No: J322

LAB SAMPLE NO.	SMC1 #	SMC2 #	OTHER	TOT OUT
01 HG328	95			0
02 98395	94			0
03 98397	93			0
04 98398	93			0
05 98399	96			0
06 98400	93			0
07 98401	94			0
08 98402	95			0
09 98396	100			0
10 98396MS	100			0
11 98396MSD	100			0
12				
13				
14				
15				
16				
17				
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24				
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27				
28				
29				
30				

QC LIMITS

SMC1 = a,a,a-Trifluorotoluene (69-127)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

VOLATILE SPIKE RECOVERY SUMMARY
METHOD 602

Matrix: WATER

Matrix Spike - Lab Sample No.: 98396

Level: LOW

MS Sample from Lab Job No: J322

QA Batch: 6588

Compound	MS % REC.	BS % REC.	LIMITS
Benzene	106	94	74-129
Toluene	101	89	62-150
Chlorobenzene	111	98	81-125
Ethylbenzene	104	91	68-149
1,3-Dichlorobenzene	114	102	74-128
1,4-Dichlorobenzene	114	104	71-145
1,2-Dichlorobenzene	116	106	73-128

* Values outside of QC limits

Spike Recovery: 0 out of 14 outside limits

COMMENTS: _____